

NAUGHTY BOY

OPERATION AND MAINTENANCE
MANUAL

CINEMATRONICS, INC.
1841 FRIENDSHIP DRIVE
EL CAJON, CA 92020
(714) 562-7000

TELEX: CINEMAT ELCJ 697891
CALL TOLL FREE: (800) 854-2666
IN CALIFORNIA CALL: (714) 562-7000
SALES: 8-5 (PST) WEEKDAYS
SERVICE: 8-5 (PST) WEEKDAYS

NAUGHTY BOY

GAME MANUAL

TABLE OF CONTENTS

	<u>PAGE</u>
FCC WARNING	1
WARRANTY.	2
CUSTOMER SERVICE PROCEDURES	3
RECEIVING AND INSTALLING.	5
NAUGHTY BOY - GAME DESCRIPTION.	6
OPTION SWITCH SETTINGS.	10
ROUTINE MAINTENANCE	11
WELLS-GARDNER COLOR MONITOR INFORMATION	12
PARTS LIST - GAME ASSEMBLY.	28
PARTS LIST - ELECTRONIC BOARDS.	39
BOARD EDGE CONNECTOR PIN-OUT LIST	43
APPENDIX A -	

ASSEMBLY DRAWINGS AND SCHEMATICS:

ELECTRONIC BOARD LAYOUTS AND SCHEMATICS

GAME ASSEMBLY DRAWINGS, SCHEMATICS AND HARNESS WIRE
LISTS

CINEMATRONICS, INC.

WARNING:

This equipment generates, uses, and can radiate radio frequency energy; and, if not installed and used in accordance with the Instruction's Manual, may cause interference to radio communication. As temporarily permitted by regulation, it has not been tested for compliance pursuant to Subpart J of Part 15 of FCC rules, which is designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

WARRANTY

Cinematronics, Inc. warrants the goods to be free from defects in material and workmanship under normal use and service for a period of ninety (90) days from the date of shipment from factory. Cinematronics makes no representation or warranties concerning the goods whether express or implied by operation of law or otherwise, including those of merchantability or fitness for any particular purpose, or with respect of patent infringement, except as may be specifically made herein. Cinematronics limits its warranty obligations herein to the repair or replacement of such parts which have been returned to Cinematronics' plant at purchaser's expense and which examination shall disclose Cinematronics' satisfaction to have been so defective and to the shipment of such repaired or replacement parts to the purchaser F.O.B. the shipping point.

This warranty does not apply to any Cinematronics' product which has been altered or repaired by unauthorized personnel or service facilities or any products which have had the unit serial number altered or removed.

Upon acceptance of the goods, the purchaser agrees to assume all liability for damages and/or bodily injury by the purchaser or any other person and to hold Cinematronics, Inc. harmless from liability or claims arising from the use of the goods by any person. Purchaser further agrees to indemnify Cinematronics, Inc. from any liability, claim, cause of action or litigation resulting from the use or misuse of the goods by any person.

Parts returned for warranty service must be packaged so that no damage is incurred during the shipment. Full documentation and instructions must accompany returned parts. Parts must be shipped prepaid to:

Cinematronics, Inc.
1841 Friendship Drive
El Cajon, CA 92020

CUSTOMER SERVICE PROCEDURES
FOR AUTHORIZED CINEMATRONICS' DISTRIBUTORS

It is the desire of Cinematronics, Inc. to provide efficient and courteous service should the need arise. We have a fully staffed Customer Service Department and encourage you to call our toll-free number: (800) 854-2666 for technical assistance between the hours of 8:00 A.M. and 5:00 P.M., California time, Monday through Friday.

In order to provide the very best service possible, the following procedure for ordering or returning parts must be followed:

1. All equipment ordered from Customer Service, whether in or out of Warranty, must be placed with a Distributor's purchase order, either by mail or verbally by telephone.
2. Advance replacement items may be obtained only during the term of the Warranty and when such items are available, using the same procedure as when ordering parts. When ordering a PCB, please include with your order the game serial number and the number of the PCB you wish replaced.
3. All items received as advance replacements will, after a period of thirty (30) days, become the property of the Distributor, with applicable charges applied in the event Customer Service has not received the defective item against which the advance replacement was made.
4. The Distributor must call this facility for an RMA number prior to returning any item. Please be prepared to provide us with the game serial number and the PCB number when requesting an RMA.
5. In all situations covered above, and in all other situations, the Warranty offered by Cinematronics, Inc. is applicable and should be fully understood.
6. Parts returned for service must be packaged so that no damage is incurred during the shipment. Cartons without a prominently displayed RMA number will not be accepted. Full

documentation including game serial number, PCB number on outside of package, and reason for return must accompany parts. Ship prepared to:

Cinematronics, Inc.
Customer Service Department
1841 Friendship Drive
El Cajon, CA 92020

(800) 854-2666

(714) 562-7000

RECEIVING AND INSTALLING

RECEIVING INSPECTION

Your game was shipped in ready-to-play condition. However, after removal of the shipping carton, a brief visual examination is suggested.

Naturally, you will want to make note of any physical damage to the game cabinet and its external components for freight claim purposes. Considering the quality of the shipping carton, any damage to the exterior would indicate possible interior damage as well.

The interior of the game should also undergo a brief examination for: loose mounting hardware (check to be sure that the major components are still securely mounted); disconnected or loose wires, cables or harnesses; electronic devices loose in their sockets; etc.

At this time the game serial number should be logged. Remember that the game serial number will be required if you need service from your distributor. Please complete the postage-free reply card and mail immediately.

ELECTRICAL REQUIREMENTS

Unless specified otherwise, your game was shipped to operate at 115 VAC, 50/60 Hz.

A good earth ground is essential for the proper operation of this game or for that matter, any electronic device. Problems with instability and erratic operation of computer-type devices can usually be traced to an ineffective ground system. Therefore, plug the game into a properly wired three prong outlet. If a three prong to a two prong AC adaptor must be used, an alternate method of grounding the third prong must be used.

NAUGHTY BOY

GAME DESCRIPTION

GAME PLAY

Game play for Naughty Boy proceeds through four different screens. These screens will appear in sequence. Each time a player successfully maneuvers through all four screens, the screens repeat their appearance, with more objects moving at higher speeds. In addition, after successfully completing even numbered rounds, the player is awarded a bonus round.

SCREEN ONE

This screen begins with Naughty Boy standing in a forest. In front of him are several monsters. There is also a safety zone that can be entered through two red doors, which the monsters cannot enter. The same type of doors appear on fences along the side of the screen. Naughty Boy can appear on the other side of the screen by passing through one of these doors.

As Naughty Boy moves towards the top of the screen, the images scroll downwards. Above the forest is a series of fences, then a group of ponds, and finally, walls of a fortress. Some goblins guard the top portion of the screen.

Naughty Boy must maneuver his way through the forest, past the fences and ponds and destroy the flags that are flying on the fortress. The player controls Naughty Boy with a four position joystick. In addition, a throw button allows the player to throw rocks at objects to destroy them.

Naughty Boy must avoid contact with the monsters and goblins or he will be destroyed. Also, a dragon will randomly appear on the ponds breathing fire. If Naughty Boy is hit by the fire, he will be destroyed.

The safety zone allows Naughty Boy to attack the monsters and goblins without danger by throwing rocks at them outside. A timer begins to decrease whenever Naughty Boy is inside the

safety zone. Once the timer reaches zero, the red doors disappear and Naughty Boy can be attacked.

Periodically, a question mark will appear on the screen. If Naughty Boy hits the question mark with a rock, he will become invincible to attack from the monsters and goblins for a short time. Naughty Boy can still be destroyed by the dragon. After the question mark is hit, different objects will appear in the same spot. These objects will score bonus points when hit with rocks.

Once Naughty Boy reaches the fortress, he must hit all the flags with rocks. Two flags can be destroyed with one throw, if the rock lands in between two flags. Once all the flags are destroyed, Naughty Boy will proceed to the next screen.

If Naughty Boy is destroyed before he is able to destroy all the flags, he will reappear at the starting position of the screen he is currently in. Any flags destroyed by Naughty Boy remain destroyed.

Naughty Boy always throws in the direction that he is facing. The distance a rock is thrown is determined by how long the throw button is depressed.

SCREEN TWO

This screen is an open field. A safety zone is in the center of the field. Monsters and goblins are scattered around the field. Robots guard the fortress at the top of the screen.

Play proceeds as in the first screen. The dragon appears randomly in the field above the safety zone. Once all the flags are destroyed, Naughty Boy will appear in the next screen.

SCREEN THREE

Naughty Boy begins his adventure in the center of a maze. Goblins and monsters will chase Naughty Boy through the maze. At the top of the maze is the safety zone. Above the safety zone is the fortress. No dragons appear in this screen.

SCREEN FOUR

In this screen Naughty Boy is standing between the safety zone and some ponds. The dragon will randomly appear in the ponds. Above the ponds is a series of fences and walls. Once Naughty Boy passes through these, he reaches the fortress.

If all the flags are destroyed in this screen, Naughty Boy will appear in Screen One. However, Naughty Boy must fight more objects which are moving faster. This is true for every screen that Naughty Boy goes through.

BONUS PLAY

After successfully completing even numbered rounds, the player is given a bonus play. During bonus play, Naughty Boy flies back and forth at the top of the screen in a balloon. A fuel gauge above the balloon indicates how much bonus play is left. At the bottom of the screen, a female monster runs back and forth.

Naughty Boy throws objects out of the balloon and tries to hit the monster on the head. If the monster is struck, she changes expressions momentarily. The fuel gauge decreases as play proceeds. Play continues until the fuel runs out.

Play continues until all of a player's Naughty Boys are destroyed. A player can earn one extra Naughty Boy based upon his score achieved and the operator adjustable level selected.

SCORING

Monsters, Goblins & Robots	- 250 Points to 9000 Points
Flags	- 200 Points to 2000 Points
Bonus Objects	- 500 Points to 9000 Points

FEATURES

1. Number of Naughty Boys per game operator adjustable is 2, 3, 4 or 5.
2. Point level at which the extra Naughty Boy is awarded is operator adjustable at 10,000, 30,000, 50,000 or 70,000 points.

3. Four coinage options.
4. Easy/hard switch for longer game life.
5. Four different screens and bonus play round.
6. Fifty difficulty levels.
7. Throw distance controlled by the throw button.

NAUGHTY BOY
OPTION SWITCH SETTINGS

OPTION	FACTORY SETTING	DESCRIPTION	1	2	3	4	5	6	7	8
NUMBER OF NAUGHTY BOYS		2	ON	ON						
	X	3	OFF	ON						
		4	ON	OFF						
		5	OFF	OFF						
EXTRA BOY		10,000 Points			ON	ON				
	X	30,000 Points			OFF	ON				
		50,000 Points			ON	OFF				
		70,000 Points			OFF	OFF				
CREDITS		2 Coin, 1 Play					ON	ON		
	X	1 Coin, 1 Play					OFF	ON		
		1 Coin, 2 Play					ON	OFF		
		4 Coin, 3 Play					OFF	OFF		
DIFFICULTY	X	Easier							ON	
		Harder							OFF	
GAME TYPE		Upright								ON
		Cocktail								OFF

ROUTINE MAINTENANCE & SERVICE

Because of the solid state electronic circuitry, this machine should require very little maintenance and only occasional adjustments. However, it is necessary to take measures to ensure this.

The volume control is located on the rear of the coin door and can be accessed by opening the coin door.

The video monitor has been properly adjusted before shipping. Occasionally minor adjustments are necessary. See monitor specifications and schematics for technical information. Adjustment controls for the monitor are located at the rear of the monitor.

This machine should be serviced only by a qualified technician.

Do not make any adjustments on this machine while the power is on.

For service information, contact:

CINEMATRONICS, INC.
1841 FRIENDSHIP DRIVE
EL CAJON, CA 92020
(714) 562-7000

POWER SUPPLY

The computer board in this game operates most efficiently and reliably when the power supply is set so that the voltage on the board is 5.0 volts, ± 0.1 volts. To check this, place a meter across 5 volts and ground at the edge connector. If necessary, adjust the screwdriver control on the power supply so the meter reads between 4.9 and 5.1 volts.

NAUGHTY BOY
PARTS LISTS

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-10640-01</u>	<u>Assy, Fluorescent Lamp</u>	<u>1</u>
01-10505-01	Lamp, Fluorescent	1
26-10588-01	Fixture, Lamp, Fluorescent	1
87-11668-01	Assy, Harn Fluorescent Lamp	1
25-10579-01	Ty Rap, W/O Eyelet	7
25-10580-01	Ty Rap, W/Eyelet	3
34-11271-01	Wire, 18AWG, Twtd, Blk/Wht	
35-10614-01	Pin, Male, Molex	2
<u>38-11698-02</u>	<u>Assy, Coin Door W/Lamps</u>	<u>1</u>
20-10896-11	Coin Door W/Lamps Cocktail	1
22-10899-01	Decal, "Cinematronics"	1
25-10556-01	Nut, Hex #4-40	3
25-10570-01	Washer, Lock #4 Internal	3
38-11702-02	Assy, Coin Meter/Vol Ctl	1
20-10868-11	Brkt, Short Vol. Cntl/Counter	1
25-10557-01	Nut, Hex #6-32	2
25-10563-01	Screw, Machine, #6-32 x 1/2" Pan Hd P	2
25-10571-01	Washer, Lock, #6 Internal	2
<u>38-11757-01</u>	<u>Assy, Coin Meter</u>	<u>1</u>
29-11754-01	Meter, Coin 6 Volt (KEISU NR-06)	1
35-10614-01	Pin, Male, Molex	2
38-10961-04	Assy, Vol Ctl	1
26-10589-01	Knob, Volume	1
51-10722-01	Pot, W. Lk. Wsr/Nut, 10K Ohm	1
87-10955-01	Assy, Har, Vol Ctl	1
34-11719-01	Wire, 22AWG Blue/Red/Blk Twist	
35-10614-01	Pin, Male, Molex	1
35-10615-01	Pin, Female, Molex	2
<u>87-11680-01</u>	<u>Assy, Harn Coin Door</u>	<u>1</u>
25-10579-01	Ty Rap, W/O Eyelet	4
25-10905-01	Clamp, Cable 3/16", Plastic	4
34-10597-01	Wire, 22AWG, Blk	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10906-01	Wire, 22AWG, Twisted, Brown/White	
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11434-01</u>	<u>Assy, Monitor, Color Raster</u>	<u>1</u>
<u>87-11711-01</u>	<u>Assy, Harn Raster Mon to CPU</u>	<u>1</u>
34-10597-01	Wire, 22AWG, Blk	2
34-10606-01	Wire, 22AWG, Red	
34-10598-01	Wire, 22AWG, Green	
34-10605-01	Wire, 22AWG, Blue	
34-10607-01	Wire, 22AWG, White	
35-10614-01	Pin, Male, Molex	5
35-10615-01	Pin, Female, Molex	7
41-10954-01	Conn, 6 Cir F, Molex 03-09-2062	1
41-10651-01	Conn, Female Crimp Term, Molex	1
41-11724-01	Conn, 6 Cir Crimp Term 09-50-7061	1
25-10579-01	Ty Rap, W/O Eyelet	3
<u>38-11737-01</u>	<u>Assy, Circuit Panel</u>	<u>1</u>
38-11733-02	Assy, Boards W/Vol Mod	1
38-11738-02	Assy, Board MT-09 W/Vol Mod	1
34-10594-01	Wire, 30AWG, Blue, KYNAR	
63-10781-01	Cap, .005mf 50V DISC 20%	1
38-11738-01	Assy, Board MT-09	1
38-11739-01	Assy, Board MT-10	1
20-11687-01	Plate, Mntg Logic/Audio	1
25-10557-01	Nut, Hex #6-32	4
25-11756-01	Screw, Machine #6-32 x 2" PH PN	4
25-11752-01	Washer, #6 Lock (Split Ring)	4
25-11753-01	Spacer, Nylon #6-5/8" (Smith 4025)	8
25-11749-01	Washer, #6 Flat	4
32-11736-01	Cabinet, Upright Color Raster SH	1
<u>38-11673-01</u>	<u>Assy, Ctl Pnl</u>	<u>1</u>
20-11673-01	Ctl Pnl	1
22-11674-01	Decal, Ctl Pnl	1
37-11192-01	Button, Short, White, Cocktail	2
37-11192-02	Button, Short, Red	1

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
37-11373-01	Switch, W/Plastic Mntg Brkt, Short	3
25-10559-01	Nut, Pal 5/8"	3
25-10558-01	Nut, Hex, #10-24	4
25-10572-01	Washer, Lock, #10 Internal	8
25-10909-01	Bolt, Carriage, 3/16" x 3/4", Blk OX	4
50-11763-01	Assy, Joystick 4 Pos WICO 15-9518	1
25-11688-01	Screw, Machine 8-32 x 1/2"	4
<u>87-11679-01</u>	<u>Assy, Harn Ctl Pnl</u>	<u>1</u>
34-10596-01	Wire, 22AWG/TC, Buss	
34-10597-01	Wire, 22AWG, Blk	
34-10607-01	Wire, 22AWG, White	
34-10598-01	Wire, 22AWG, Green	
34-10600-01	Wire, 22AWG, Purple	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10602-01	Wire, 22AWG, Orange	
35-10614-01	Pin, Male, Molex	9
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1
25-10579-01	Ty Rap, W/O Eyelet	8
23-11152-01	Tape, Foam 3/4"	
<u>38-10894-01</u>	<u>Assy, Coin Drawer</u>	<u>1</u>
20-10862-01	Brkt, Coin Box Tong	1
20-10864-01	Handle, Coin Box	1
20-10871-01	Coin Box	1
20-10872-01	Cover, Coin Box	1
<u>38-11700-01</u>	<u>Assy, P.S./Transformer (Raster)</u>	<u>1</u>
20-11606-01	Plate, Mtg, P/S, Transformer	1
25-10551-01	Bolt, Carriage, 3/16" x 1/2" Black O	8
25-11607-01	Stand-Off, Nylon, Locking, DLCBS-14	4
25-11612-01	Washer, Lock #8	8
25-11613-01	Nut, #8-32	8

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11723-01</u>	<u>Assy, Transformer ISOL Ravenswood</u>	<u>1</u>
43-11704-01	Transformer, ISOL Ravenswood	1
<u>87-11688-01</u>	<u>Assy, Harn Trans/Monitor</u>	<u>1</u>
<u>87-11768-01</u>	<u>Assy, Harn Trans/P.S.</u>	<u>1</u>
<u>87-11767-01</u>	<u>Assy, Harn Trans Gnd.</u>	<u>1</u>
<u>81-11685-01</u>	<u>PCA, Regulator +12V, -5V</u>	<u>1</u>
20-10520-01	Heat Sink, Thermalloy 6071B	2
20-10521-01	Heat Sink, Thermalloy 6072B	2
25-10556-01	Nut, Hex #4-40	4
25-10570-01	Washer, Lock, #4 Internal	4
25-10974-01	Screw, Machine 4-40-3/8" Pan HD PH	4
41-10661-01	Conn, 6 Cir WAF, Molex 09-18-506	1
53-10732-01	Res, 470 Ohm 1/4W 5% C	1
53-10734-01	Res, 1K Ohm 1/4W 5% C	1
53-11707-01	Res, 150 Ohm 5W Ceramic "Block"	3
63-10784-01	Cap, .1mf 50V Disc 20%	4
63-11128-01	Cap, 22mf 50V Electrolytic Radial	3
65-10812-01	Diode, 1N4003, Encpl	4
66-11705-01	Trans, 7812	1
66-11706-01	Trans, 7905	1
80-11685-01	PCB, Regulator +12V, -5V	1
82-10842-30	Power Supply, Data Power	1
 <u>38-10638-01</u>	 <u>Assy, Speaker</u>	 <u>1</u>
20-11382-01	Grill, Speaker	1
71-10834-01	Speaker	1
 <u>87-11681-02</u>	 <u>Assy, Harn Main W/Conn</u>	 <u>1</u>
87-11681-01	Assy, Harn Main	1
34-10597-01	Wire, 22AWG, Blk	
34-10598-01	Wire, 22AWG, Green	
34-10599-01	Wire, 22AWG, Yellow	
34-10600-01	Wire, 22AWG, Purple	
34-10602-01	Wire, 22AWG, Orange	
34-10603-01	Wire, 22AWG, Grey	

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10606-01	Wire, 22AWG, Red	
34-10607-01	Wire, 22AWG, White	
34-10608-01	Wire, 18AWG, Red	
34-10610-01	Wire, 18AWG, Black	
34-11407-01	Wire, 18AWG, Yellow	
35-10614-01	Pin, Male, Molex	15
35-10615-01	Pin, Female, Molex	14
41-11746-01	Conn, Edge 36P Sullins EZM18DSEH	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	1
41-10648-01	Conn, 15 Cir F, Molex 03-09-2153	1
41-10883-01	Conn, 3 Cir M, Molex 03-09-1038	1
41-10647-01	Conn, 12 Cir M, Molex 03-09-1122	1
41-10657-01	Conn, 6 Cir M, Molex 03-09-1063	1
<u>87-11677-01</u>	<u>Assy, Harn Ctl Pnl Interface</u>	<u>1</u>
34-10597-01	Wire, 22AWG, BLK	
34-10607-01	Wire, 22AWG, White	
34-10598-01	Wire, 22AWG, Green	
34-10600-01	Wire, 22AWG, Purple	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10602-01	Wire, 22AWG, Orange	
35-10615-01	Pin, Female, Molex	18
41-10660-01	Conn, 15 Cir M, Molex 03-09-1152	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	1
25-10579-01	Ty Rap, W/O Eyelet	6
25-10580-01	Ty Rap, W/Eyelet	3

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>87-11755-01</u>	<u>Assy, Harn Coin Door Inter. Raster</u>	<u>1</u>
34-10597-01	Wire, 22AWG, Blk	
34-10599-01	Wire, 22AWG, Yellow	
34-10600-01	Wire, 22AWG, Purple	
34-10606-01	Wire, 22AWG, Red	
34-11719-01	Wire, 22AWG Blu/Red/Blk Twist	
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	1
35-10614-01	Pin, Male, Molex	9
35-10615-01	Pin, Female, Molex	7
25-10579-01	Ty Rap, W/O Eyelet	5
25-10580-01	Ty Rap, W/Eyelet	2
<u>87-11701-01</u>	<u>Assy, AC Power Cord Harn</u>	<u>1</u>
25-10561-01	Nut, Wire	1
25-10579-01	Ty Rap, W/O Eyelet	15
25-10580-01	Ty Rap, W/Eyelet	5
34-10608-01	Wire, 18AWG, Red	
34-10609-01	Wire, 18AWG, Blue	
34-10610-01	Wire, 18AWG, Black	
34-10908-01	Wire, 18AWG, Orange	
34-11187-01	Wire, Stripe, 18AWG, Red/Black	
34-11412-01	Wire, 18AWG, Brown	
34-11718-01	Wire, 18AWG, Blu/Blk	
35-10614-01	Pin, Male, Molex	14
35-10615-01	Pin, Female, Molex	5
35-10617-01	Terminal, Female, Quick Disconnect	2
41-10647-01	Conn, 12 Cir M, Molex 03-09-1122	1
41-10657-01	Conn, 6 Cir M, Molex 03-09-1063	1
41-10884-01	Conn, 12 Cir F, Molex 03-09-2121	1
87-10967-01	Assy, Cord, AC Power	1

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>87-11692-01</u>	<u>Assy, Harn Speaker</u>	<u>1</u>
34-10906-01	Wire, 22AWG, Twisted, Brown/White	
35-10614-01	Pin, Male, Molex	2
35-10617-01	Terminal, Female, Quick Disconnect	2
25-10580-01	Ty Rap, W/Eyelet	2
41-10659-01	Conn, 3 Cir F, Molex 03-09-2038	1
<u>38-10892-01</u>	<u>Assy, Interlock Swt, Back Panel</u>	<u>1</u>
20-10863-01	Brkt, Interlock Switch	1
37-10893-01	Switch, Interlock	1
20-11376-02	Retainer, Marquee Plexi Upper 23	1
20-11377-02	Retainer, Marquee Plexi Lower 23	1
21-11666-03	Plexi, Front Screened	1
21-11694-01	Plexi Smoked 23. 75 x 20	1
21-11741-02	Plexi, Marquee Screened	1
22-11742-01	Decal, Side	2
25-10553-01	Bolt, Carriage, 3/16" 2", Black OX	4
25-10560-01	Nut, Wing, 3/16" #10-24	6
25-10568-01	Washer, Flat, #10 x 1/2"	23
25-10551-01	Bolt, Carriage, 3/16" x 1/2" Black O	1
25-11392-01	Bolt, Carriage, 3/16" x 1 1/4", Blk	16
25-10566-01	Screw, Wood, #8 x 5/8", Bx Dr Blk, OX	22
25-11613-01	Nut, #8-32	24
25-11721-01	Hook, Key	1
<u>38-11728-02</u>	<u>Kit, Spares</u>	<u>1</u>
18-11732-01	Screwdriver, BX DR #8 VACO TR-2	1
25-10566-01	Screw, Wood, #8 x 5/8", BX DR BLK, OX	6
67-11580-01	Fuse, 5AMP Slow Blow	1
67-10832-01	Fuse, 5AMP, 3AG	1

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
21-10831-01	Bezel, CRT, Formed	1
22-10542-01	Label, "Patent Notice"	1
22-10544-01	Label, "Unit Wired For"	1
34-10903-01	Braid, Flat, Tinner Copper, 3/16"	10
35-11096-01	Lug, Ground	6
72-11734-01	Manual, Operator	1
<u>38-11758-02</u>	<u>Assy, Shipping Cont. Raster Short</u>	<u>1</u>
15-11179-01	Cap	2
15-11180-01	Pads, Corner	4
15-11181-01	Pallet Foam	1
15-11759-01	Sleeve, Game (29x33x72) 600DW	1
15-11760-01	Banding, Plastic 3/8"	
	The following parts are used on the Cocktail Table game cabinet ONLY:	
20-11420-01	Rail, CRT Mtg	2
21-11715-01	Plexi, Smoked Top	1
32-11427-01	Cabinet, W/Back	1
32-11428-01	Bracket, Glass Holder	1
32-11556-01	Bkt, Speaker	1
25-11722-01	Leveler, Leg	4
38-11439-01	Assy, Speaker	1
25-11414-01	Screw, Wood, #8-1 1/4", BX DR, BLK O	2
71-10834-01	Speaker	1
<u>38-11441-01</u>	<u>Assy, Coin Box</u>	<u>1</u>
20-10871-02	Coin Drawer	1
20-10872-02	Cover, Coin Drawer	1
<u>38-11691-01</u>	<u>Assy, Ctl Pnl Plyr #1</u>	<u>1</u>
20-11691-01	Ctl Pnl Plyr #1	1
22-11744-01	Decal, Ctl Pnl Plyr #1	1

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11691-02</u>	<u>Assy, Ctl Pnl Plyr #2</u>	<u>1</u>
20-11691-02	Ctl Pnl Plyr #2	1
22-11744-02	Decal, Ctl Pnl Plyr #2	1
<u>38-11716-01</u>	<u>Assy, Power Supply Raster</u>	<u>1</u>
20-11709-01	Plate, Mntg P/S & Trans	1
<u>87-11710-01</u>	<u>Assy, Harn Ctl Pnl Inter</u>	<u>1</u>
25-10579-01	Ty Rap, W/O Eyelet	5
25-10580-01	Ty Rap, W/Eyelet	2
34-10597-01	Wire, 22AWG, Blk	
34-10598-01	Wire, 22AWG, Green	
34-10599-01	Wire, 22AWG, Yellow	
34-10600-01	Wire, 22AWG, Purple	
34-10602-01	Wire, 22AWG, Orange	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	
34-10605-01	Wire, 22AWG, Blue	
34-10607-01	Wire, 22AWG, White	
35-10614-01	Pin, Male, Molex	1
35-10615-01	Pin, Female, Molex	30
41-10648-01	Conn, 15 Cir F, Molex 03-09-2153	1
41-10649-01	Conn, 9 Cir M, Molex 03-09-1093	2
<u>87-11708-01</u>	<u>Assy, Harn Ctl Pnl #1</u>	<u>1</u>
<u>87-11708-02</u>	<u>Assy, Harn Ctl Pnl #2</u>	<u>1</u>
34-10596-01	Wire, 22AWG/TC, Buss	
34-10597-01	Wire, 22AWG, Black	
34-10607-01	Wire, 22AWG, White	
34-10598-01	Wire, 22AWG, Green	
34-10600-01	Wire, 22AWG, Purple	
34-10599-01	Wire, 22AWG, Yellow	
34-10603-01	Wire, 22AWG, Grey	
34-10604-01	Wire, 22AWG, Brown	

PARTS LIST
NAUGHTY BOY TOP ASSEMBLY

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
34-10605-01	Wire, 22AWG, Blue	
34-10602-01	Wire, 22AWG, Orange	
35-10614-01	Pin, Male, Molex	9
41-10885-01	Conn, 9 Cir F, Molex 03-09-2092	1
25-10579-01	Ty Rap, W/O Eyelet	8
92-11740-01	Glass, Top Screened	1
20-11156-01	Grill, Heat Vent	2
23-11425-01	Tape, Foam 1.5"	

PARTS LIST
ELECTRONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11733-01</u>	<u>Assy, Boards NB</u>	
<u>38-11820-01</u>	<u>Assy, Game NB 8201 (NB)</u>	<u>1</u>
<u>81-11821-01</u>	<u>Assy, Game NB 8201</u>	<u>1</u>
36-10621-01	Socket, 24 Pin, IC Dip Solder Tail	8
36-11784-01	Socket, 40 Pin Diptail	1
37-11824-01	Switch, Dip 8 Pos DC5V 1A Uni-Aut	1
44-10679-01	IC, 74LS04	1
44-10680-01	IC, 74LS08	1
44-10683-01	IC, 74LS32	3
44-10689-01	IC, 74LS157	1
44-10690-01	IC, 74LS163	1
44-11028-01	IC, 74LS74	1
44-11029-01	IC, 74LS138	2
44-11036-01	IC, 7407	1
44-11340-01	IC, 74LS125	1
44-11343-01	IC, LM556	2
44-11478-01	IC, 74LS153	1
44-11483-01	IC, 74LS174	1
44-11486-01	IC, 74LS244	3
44-11487-01	IC, 74LS245	2
44-11492-01	IC, 74LS374	2
44-11825-01	IC, 74LS14	2
44-11827-01	IC, 74LS145	2
44-11828-01	IC, LM324	2
44-11829-01	IC, LM380	1
44-11830-01	IC, I4006B	1
44-11831-01	IC, I4066B	1
44-11832-01	IC, TMS-3615	1
44-11833-01	IC, Z-80A	1
44-11834-01	IC, 2114/4	2
53-10726-01	RES, 100 OHM 1/4W 5% C	7
53-10727-01	RES, 150 OHM 1/4W 5% C	4

PARTS LIST
ELECTRONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
53-10731-01	RES, 330 OHM 1/4W 5% C	3
53-10732-01	RES, 470 OHM 1/4W 5% C	2
53-10735-01	RES, 1.5K OHM 1/4W 5% C	41
53-10737-01	RES, 2K OHM 1/4W 5% C	6
53-10746-01	RES, 10K OHM 1/4W 5% C	10
53-10749-01	RES, 20K OHM 1/4W 5% C	10
53-10756-01	RES, 47K OHM 1/4W 5% C	5
53-10924-01	RES, 33K OHM 1/4W 5% C	5
53-10928-01	RES, 100K OHM 1/4W 5% C	4
53-10931-01	RES, 200K OHM 1/4W 5% C	6
53-11308-01	RES, 510K OHM 1/4W 5% C	1
53-11836-01	RES, 510 OHM 1/4W 5% C	2
63-10782-01	CAP, .01mf 50V Disc 20%	1
63-10940-01	CAP, .001mf 50V Disc 20%	1
63-10993-01	CAP, 47mf 50V Electrolytic Radial	3
63-11100-01	CAP, .01uf 50V Film	3
63-11370-01	CAP, 10mf 50V Electrolytic	15
63-11837-01	CAP, 1mf 50V Electrolytic	14
63-11838-01	CAP, 2.2mf 50V Electrolytic	3
63-11839-01	CAP, 470mf 50V Electrolytic	1
63-11840-01	CAP, .047mf 50V Disc	15
66-11841-01	Trans, 2SC-1815	1
80-11821-01	Board, NB-8201	1
87-11842-01	Assy, R. Cble Flat 50 Cir	2
44-11826-01	IC, 74LS136	1
05-11823-01	Assy, E Prom Kit NB-8201 (NB)	1
02-11823-01	E Prom, #1 NB	1
02-11823-02	E Prom, #2 NB	1
02-11823-03	E Prom, #3 NB	1
02-11823-04	E Prom, #4 NB	1
02-11823-05	E Prom, #5 NB	1
02-11823-06	E Prom, #6 NB	1
02-11823-07	E Prom, #7 NB	1
02-11823-08	E Prom, #8 NB	1

PARTS LIST
ELECTRONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
<u>38-11820-02</u>	<u>Assy, Game NB 8202 (NB)</u>	<u>1</u>
<u>81-11822-01</u>	<u>Assy, Game NB 8202</u>	1
36-10620-01	Socket, 16 Pin, IC, Dip Solder Tail	2
36-10621-01	Socket, 24 Pin, IC, Dip Solder Tail	8
44-10677-01	IC, 74LS00	2
44-10679-01	IC, 74LS04	2
44-10680-01	IC, 74LS08	2
44-10686-01	IC, 74LS86	4
44-10687-01	IC, 74LS107	1
44-10688-01	IC, 74LS151	4
44-10689-01	IC, 74LS157	9
44-10690-01	IC, 74LS163	4
44-11028-01	IC, 74LS74	3
44-11029-01	IC, 74LS138	2
44-11032-01	IC, 74LS174	5
44-11341-01	IC, 7404	2
44-11487-01	IC, 74LS245	2
44-11490-01	IC, 74S283	3
44-11492-01	IC, 74LS374	3
44-11826-01	IC, 74LS136	1
44-11843-01	IC, 6301	2
44-11834-01	IC, 2114/4	8
53-10726-01	RES, 100 OHM 1/4W 5% C	1
53-10734-01	RES, 1K OHM 1/4W 5% C	1
53-11306-01	RES, 1.2K OHM 1/4W 5% C	2
63-10780-01	CAP, 470PF 50V Disc 20%	1
63-10790-01	CAP, 47mf 50v Electrolytic Axial	1
63-10940-01	CAP, .001mf 50V Disc 20%	2
63-11840-01	CAP, .047mf 50V Disc	16
69-11844-01	Crystal, 12 MHZ HC-18/U	1
80-11822-01	Board, NB-8202	1
05-11823-02	Assy, E Prom Kit NB-8201 (NB)	1
02-11823-09	E Prom, #9 NB	1
02-11823-10	E Prom, #10 NB	1

PARTS LIST
ELECTRTONIC BOARDS

CINEMATRONICS PART NUMBER	DESCRIPTION	QTY.
02-11823-11	E Prom, #11 NB	1
02-11823-12	E Prom, #12 NB	1
02-11823-13	E Prom, #13 NB	1
02-11823-14	E Prom, #14 NB	1
02-11823-15	E Prom, #15 NB	1
02-11823-16	E Prom, #16 NB	1

NAUGHTY BOY
BOARD EDGE CONNECTOR PIN-OUT LIST

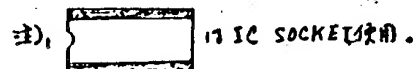
<u>EDGE CONN. PIN (J1)</u>	<u>FUNCTION</u>	<u>TO</u>	<u>WIRE COLOR</u>
J1-A	Ground, Monitor	J6-1	Black
J1-1	Ground, Power Supply	J5-1	Black
J1-B	Ground, Volume Pot	J2-7	Black
J1-2	Ground, Connector Switch	J2-1	Black
J1-C	Not Used		
J1-3	Ground, Control Panel	J3-7	Black
J1-D	Speaker Ground	J4-1	Black
J1-4	Speaker Output	J4-2	Brown
J1-E	Not Used		
J1-5	Coin Switch	J2-2	Yellow
J1-F	Not Used		
J1-6	Not Used		
J1-H	+12 Volts	J5-4	Yellow
J1-7	+12 Volts	--	--
J1-J	Volume Pot	J2-5	Red
J1-8	Volume Pot	J2-6	Blue
J1-K	+5 Volts	J5-2	Red
J1-9	+5 Volts, Counter	J2-4	Red
J1-L	Not Used		
J1-10	Not Used		
J1-M	Player Two - Up	J3-6	Violet
J1-11	Player One - Up	J3-10	Violet
J1-N	Player Two - Down	J3-4	Gray
J1-12	Player One - Down	J3-12	Gray
J1-P	Player Two - Right	J3-2	Blue
J1-13	Player One - Right	J3-14	Blue
J1-R	Player Two - Left	J3-1	Orange
J1-14	Player One - Left	J3-15	Orange

NAUGHTY BOY
BOARD EDGE CONNECTOR PIN-OUT LIST

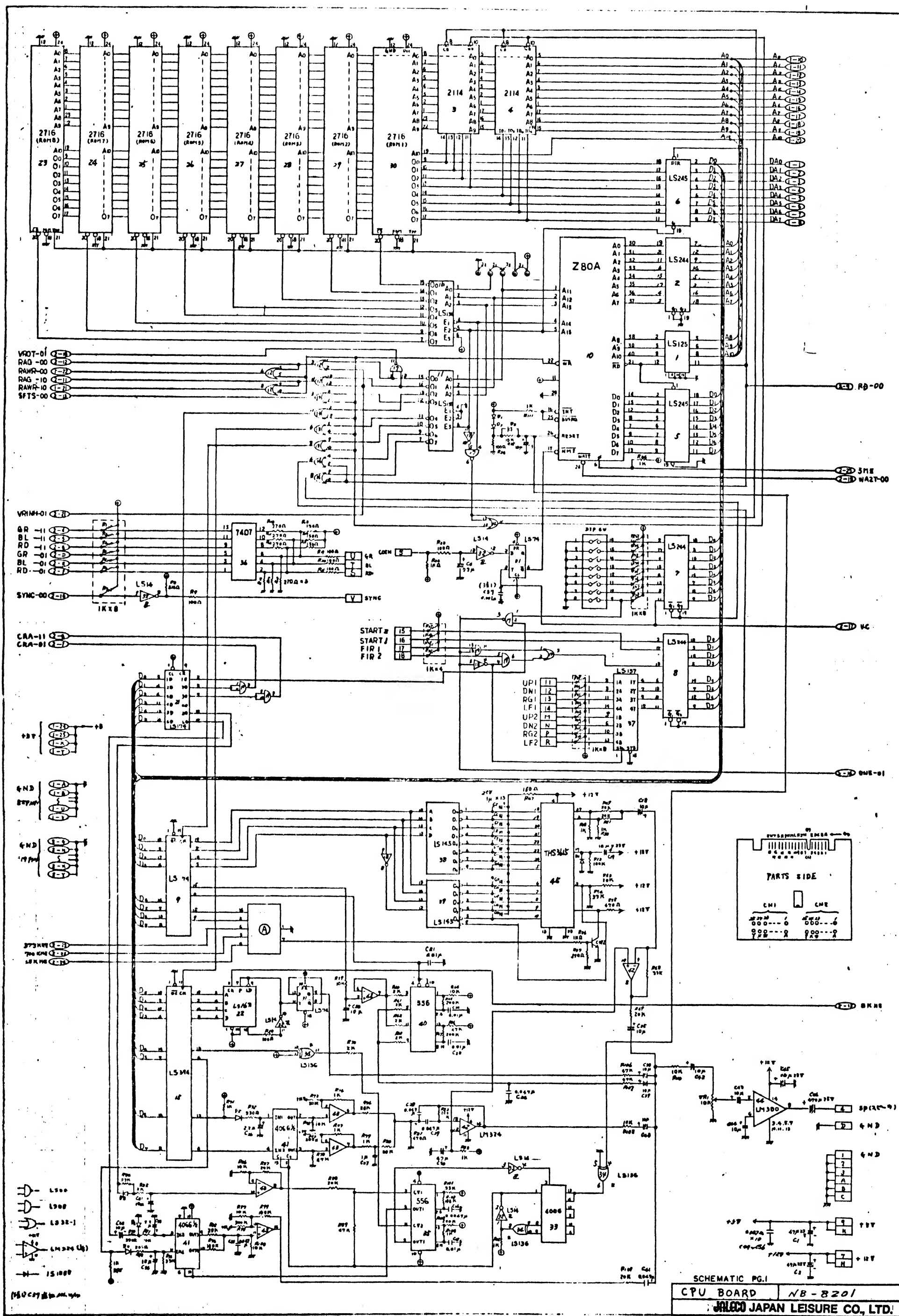
<u>EDGE CONN. PIN (J1)</u>	<u>FUNCTION</u>	<u>TO</u>	<u>WIRE COLOR</u>
J1-S	Monitor - Red	J6-2	Red
J1-15	Player Two - Start	J3-8	White
J1-T	Monitor - Blue	J6-4	Blue
J1-16	Player One - Start	J3-9	Green
J1-U	Monitor - Green	J6-3	Green
J1-17	Player One - Fire	J3-11	Yellow
J1-V	Monitor Sync.	J6-5	White
J1-18	Player Two - Fire	J3-5	Yellow

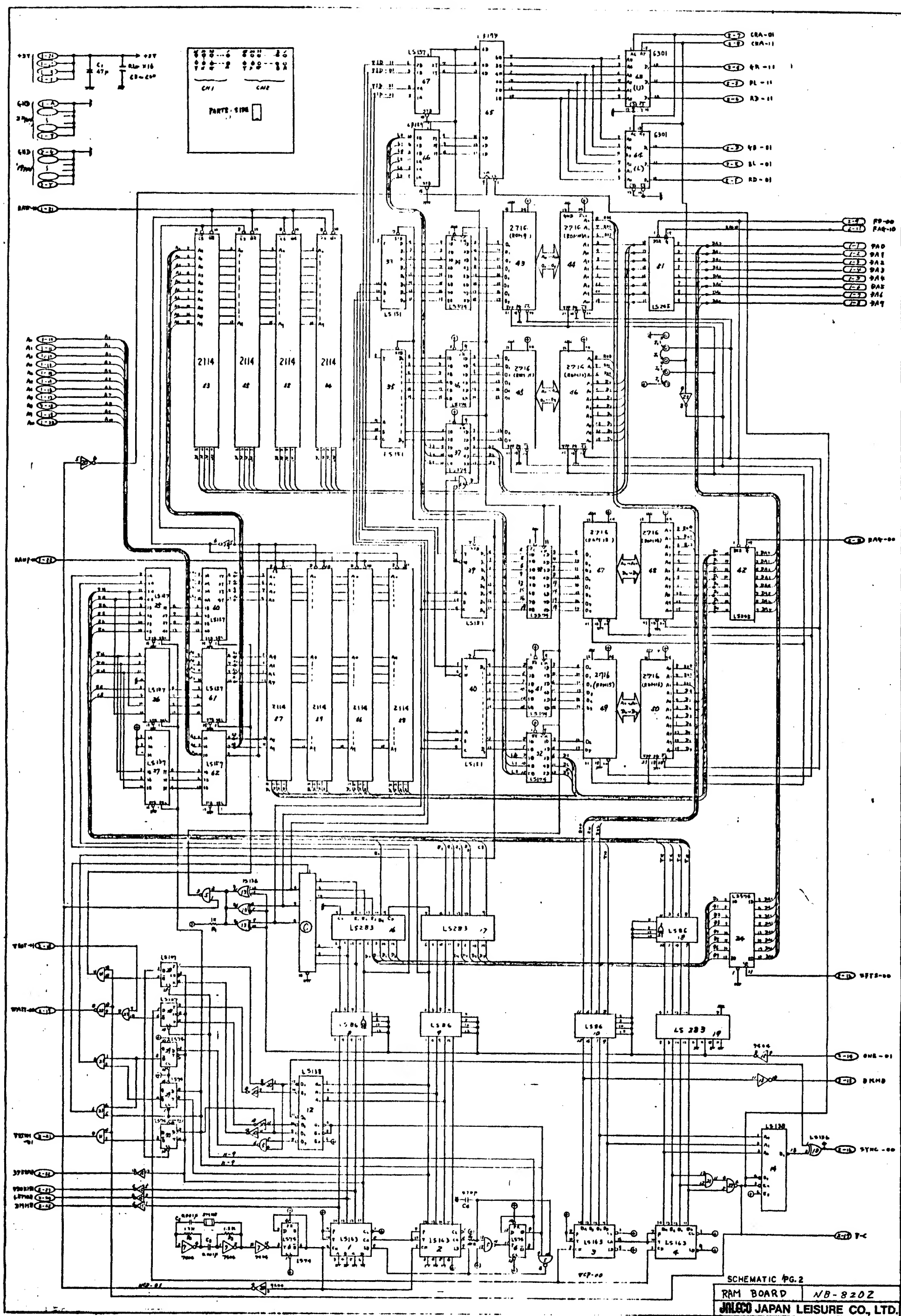
APPENDIX A

Assembly Drawings
Schematics
and
Wiring Diagrams



JALCO JAPAN LEISURE CO., LTD.





PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINCINNATI, OHIO AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINCINNATI
INC.

REVISIONS				
REV	DESCRIPTION	DATE	APPROVED	
A	ORIG. P.D. 624 * 014	4-5-62		
	RIGHT PER ECD	ECOM 7104-13-82		

- MARQUEE PLEX RETAINER (UPPER)
20-11376-02
WOOD SCREW (3)
#8 x 3/8" L6.
25-10566-01
- MARQUEE PLEX SCREENED
21-11741-02
- MARQUEE PLEX RETAINER (LOWER)
20-11377-02
WOOD SCREW (3)
#8 x 3/8" L6.
25-10566-01
- SPEAKER GRILL
(REF.)
20-11382-01
- FRONT PLEX SCREENED
21-11666-03
PLEXI SMOKE FRONT
(FAR SIDE)
21-11694-01
- LEXAN
22-11674-01
- CONTROL PANEL ASSY
50-11673-01
CARRIAGE BOLT (4)
3/16 x 1 1/2" L6
25-10552-01
FLAT WASHER (4)
#10 x 1/2" O.D.
25-10568-01
LOCK WASHER (4)
#10 INTERNAL THD.
25-10572-01
HEX NUT (2)
#10-24
25-10558-01
WING NUT (2)
#10-24
25-10560-01
- CON DOOR ASSY
38-11698-01
CARRIAGE BOLT (4)
3/16 x 1 1/2" L6.
25-10552-01
FLAT WASHER (4)
#10 x 1/2" O.D.
25-10568-01
LOCK WASHER (4)
#10 INTERNAL THD.
25-10572-01
HEX NUT (4)
#10-24
25-10558-01

NOTE:
THIS BOLT SECURED
WITH WING NUT
(TYP) BOTH SIDES

NOTE:
THIS BOLT SECURED
WITH HEX NUT
(TYP) BOTH SIDES

SIDE DECAL (2)
22-11742-01

CABINET COLOR RASTER
(SHORT)
32-11736-01

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DRAWN BY TENNIS	DATE 4-5-62	CINCINNATI, OHIO INC		BY CAMP C. WOOD
	PROJECT ENG J.P. S.	DATE 4-5-62	DWG TITLE TOP ASSY (N.B.) UPRIGHT (SHORT CABINET)		
FINISH	RELEASE APPR J.P. S.	DATE 4-5-62	DO NOT SCALE DWG	MODEL NO 10-11734-01B	REV 0
	TOLERANCE UNLESS OTHERWISE SPECIFIED	PROJECTION 1-3-62	SCALE 1/4"	CORE IDENT	SHEET OF 2

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF COMBATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF COMBATRONICS
INC.

8

7

6

5

4

3

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

COLOR EASTER ASSY
38-11434-01
CARRIAGE BOLT (4)
3/16 x 1 1/2 L6
25-10552-01
WING NUT (4)
10-24
25-10560-01
FLAT WASHER (4)
10 x 1.0" O.D.
25-10569-01

CONTROL PANEL
HARNESS
87-11679-01

CONTROL PANEL
INTERCONN HARNESS
87-11677-01

COIN DOOR
HARNESS
87-11755-01

COIN DOOR
INTERCONNECT
HARNESS
87-11678-01

COIN DRAWER ASSY
38-10894-01
CARRIAGE BOLT
3/16 x 3/4 L6
25-10909-01
FLAT WASHER
10 x 1/2 O.D.
25-10568-01
HEX NUT
10-24
25-10558-01

FLUORESCENT LAMP
ASSY
38-10640-01
WOOD SCREW (2)
8 x 3/8 L6
25-10566-01

SPEAKER ASSY
38-10638-01
CARRIAGE BOLT (4)
3/16 x 1 1/2 L6
25-10552-01
HEX NUT (4)
10-24
25-10558-01

FLUORESCENT LAMP
HARNESS
87-11668-01

BRAID (REF.)
TERMINATES
AT SPEAKER
MTG. BOLT WITH
RING TONGUE TERM.
(FAR SIDE)

SPEAKER HARNESS
87-11692-01

RASTER MON. HARNESS
87-11708-01

BRAID TERMINATES AT
CCT MTG. BOLT WITH
RING TONGUE TERM.
(FAR SIDE)

BRAID FLAT 3/16
54-10905-01
TERMINAL RING TONGUE (L)
35-10618-01
INTERLOCK SWITCH ASSY
38-10892-01
WOOD SCREW (2)
8 x 3/8 L6
25-10566-01

BRAID (REF.)
TERMINATES AT MTG. BOLT
WITH RING TONGUE TERM.

A/C POWER CORD
HARNESS
87-11701-01

MAIN WIRE HARNESS
87-11681-01

CIRCUIT PANEL
ASSY
38-11737-01
WOOD SCREW (2)
8 x 3/8 L6
25-10566-01
TRANSFORMER
HARNESS
87-11717-01

POWER SUPPLY ASSY
38-11700-01 (SHOWN)
38-11700-02
38-11700-03

BRAID (REF.)
GROUNDED AT TOP
COIN DOOR MTG. BOLT

BRAID (REF.)
GROUNDED TO P/S
MTG. PLATE WITH
RING TONGUE TERM.

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DESIGNED BY	DATE	BY COMBATRONICS INC.	BY COMBATRONICS INC.
	PROJECT LEAD	DATE		
FINISH	REVIEWED BY	DATE	DWG TITLE	REV
	DO NOT SCALE DWG	DATE		
TOLERANCES UNLESS OTHERWISE SPECIFIED			UPRIGHT	(N.B.)
PRODUCTION SCALE			MODEL NO	DWG NO
1/4"			0	10-11734-01
CONE 10001			SHEET 2 OF 2	

4

3

2

1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG. REL. ERN *019	4-5-82	<i>[Signature]</i>

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

SPEAKER
38-10638-01

REGULATOR
BOARD
ASSY
81-11685-01

CONT. PNL
ASSY
UPRIGHT
38-11673-01

COIN DOOR
ASSY
38-11698-01

ASSY, BOARD
WITH VOL. MOD. (N.B.)
38-11733-02

RASTER COLOR
MON. ASSY
38-11434-01

POWER
SUPPLY ASSY
38-11700-01
38-11700-02
38-11700-03

FLOOR. LAMP
ASSY
38-10640-01

TRANSFORMER
ASSY
38-11723-02

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY:	DATE	CINEMATRONICS INC. El Cajon Ca 92020				
	F. RAMIREZ	5-24-82					
	PROJECT ENGR:	DATE					
	11/1/82	7-5-82					
FINISH:	RELEASE APPROV:	DATE	DWG TITLE INTERCONNECT DIAGRAM UPRIGHT (N.B.)				
	DO NOT SCALE DWG	DATE					
	TOLERANCE: UNLESS OTHERWISE SPECIFIED	DATE					
	PROJECTION: SCALE:	DATE					
	1-1-82	NONE	MODEL NO.	DWG SIZE	DWG NO.	REV.	
				C	11-11734-01	A	
CODE IDENT						SHEET 1 OF 1	

4

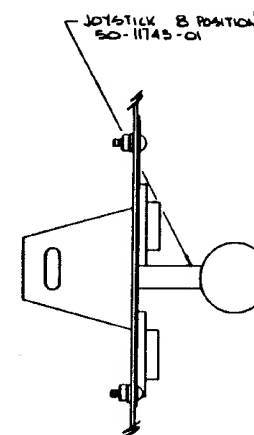
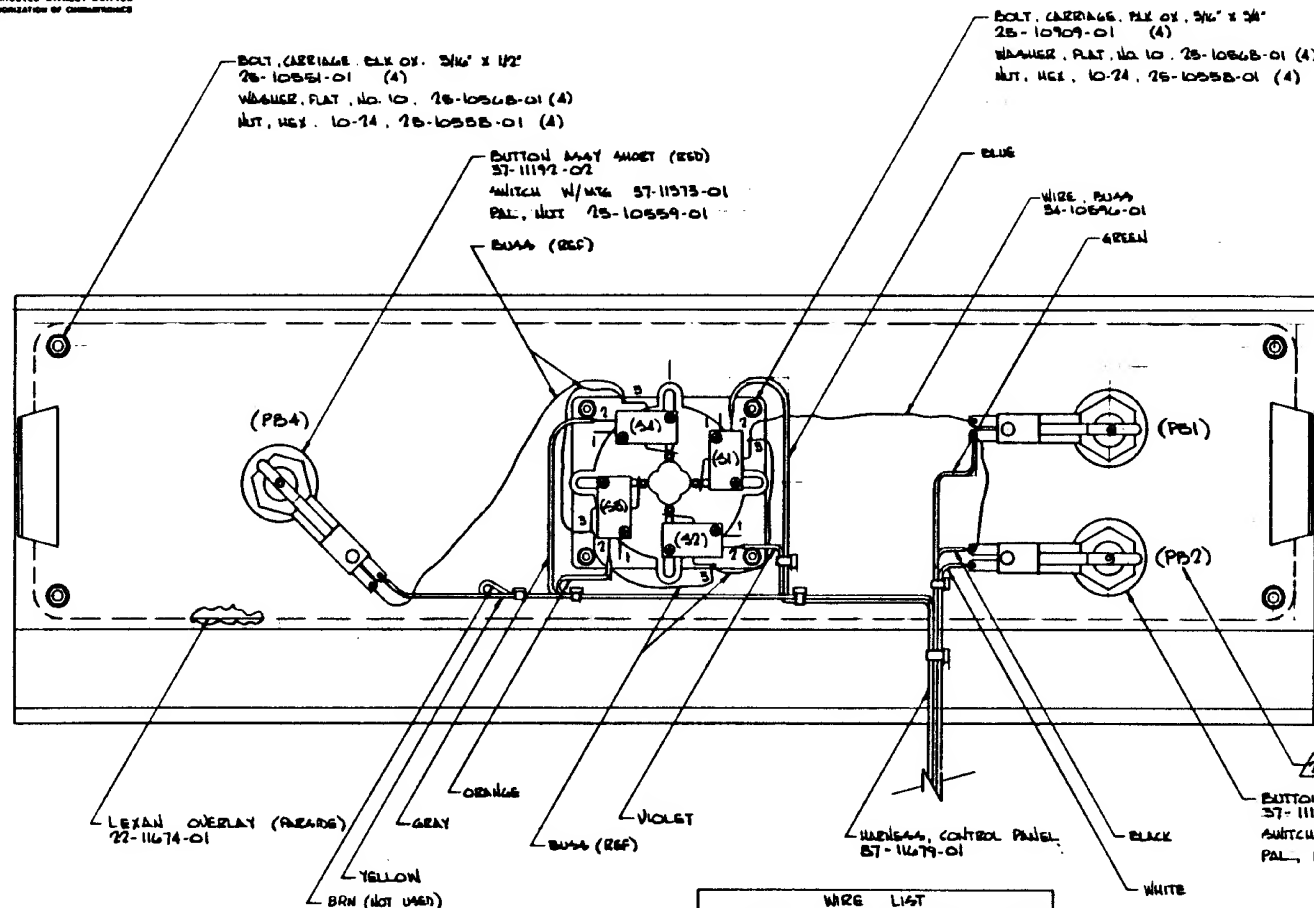
3

2

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS, INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION BY CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG. DES. ERM #014	8-5-87	<i>[Signature]</i>



WIRE LIST			
FROM	TO	WIRE	LENGTH
PB2-1	PB1-1	2.0	
PB1-1	TS1/41-B	5.0	
TS1/41-B	TS1/42-B	4.0	
TS1/42-B	TS1/43-B	4.0	
TS1/43-B	TS1/44-B	4.0	
TS1/44-B	PB4-1	9.0	

REF DES. SHOWN FOR REFERENCE ONLY AND DOES NOT APPEAR ON PART.

CINEMATRONICS PART NO.

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DESIGNED BY F. RANKIN	DATE 1/1/88	CINEMATRONICS INC. 35-11673-01	DWG TITLE CONTROL PANEL (N.B.) UPRIGHT
	PROJECT ENG J. J. JONES	DATE 1/1/88		
FINISH	RELEASE APPROV [Signature]	DATE 1/1/88	MODEL NO	DWG NO
	DO NOT SCALE DWG		35-11673-01	
TOLERANCE UNLESS OTHERWISE SPECIFIED		PRODUCTION SCALE 1:1	CODE	WENT

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIG REL ERN #013	3/25/81	KE

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
<u>P13</u> MOLEX P/N 03-09-1093 OR EQUIV. OUR P/N 9 CIR. RECEPT.	P13-1	P3-7	BLACK	22	F	36.0	GND
	P13-2	P3-8	WHITE				2 PLYR START
	P13-3	P3-9	GREEN				1 PLYR START
	P13-4	P3-10	VIOLET				CONT. LEVEL UP
	P13-5	P3-11	YELLOW				JUMP
	P13-6	P3-12	GREY				CONT. LEVEL DN
	P13-7	P3-13	BROWN				FIRE
	P13-8	P3-14	BLUE				CONT. LEVEL RIGHT
	P13-9	P3-15	ORANGE	22	F	36.0	CONT. LEVEL LEFT
<u>P3</u> MOLEX P/N 03-09-1152 OR EQUIV. OUR P/N 15 CIR. RECEPTACLE	P3-1						NOT USED
	P3-2						
	P3-3						
	P3-4						
	P3-5						
	P3-6						NOT USED
	P3-7	P13-1	BLACK	22	F		GND
	P3-8	P13-2	WHITE				2 PLYR START
	P3-9	P13-3	GREEN				1 PLYR START
	P3-10	P13-4	VIOLET				CONT. LEVEL UP
	P3-11	P13-5	YELLOW				JUMP
	P3-12	P13-6	GREY				CONT. LEVEL DN
	P3-13	P13-7	BROWN				FIRE
	P3-14	P13-8	BLUE				CONT. LEVEL RIGHT
	P3-15	P13-9	ORANGE	22	F		CONT. LEVEL LEFT

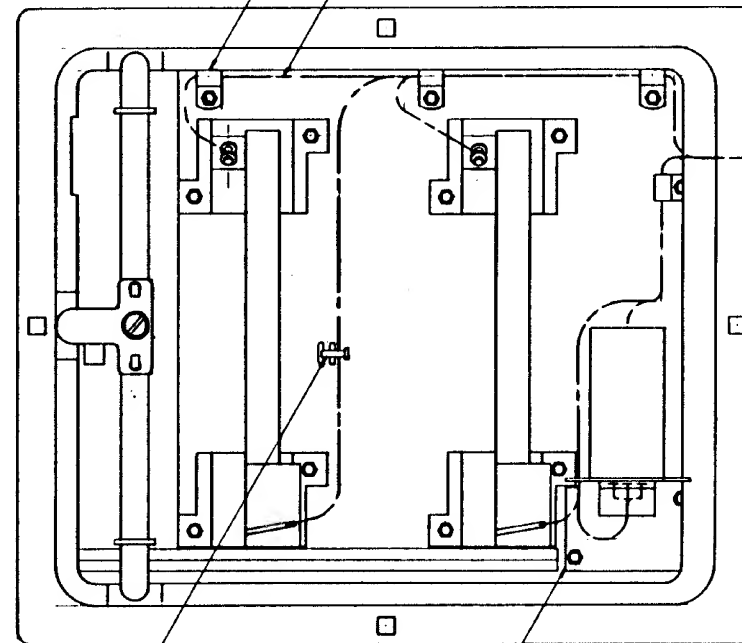
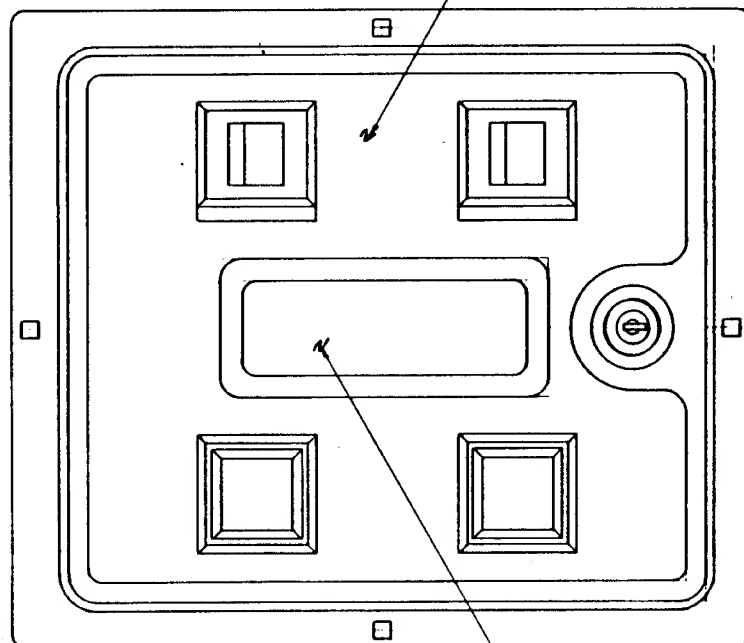
NOTES: UNLESS OTHERWISE SPECIFIED

TOL.
+1.0"
-0.0"

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE 3/24/81	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR: R. N. [Signature]	DATE 3/25/81	
	RELEASE APPROV:	DATE	
FINISH:	DO NOT SCALE DWG		DWG TITLE WIRE LIST- CONTROL PANEL INTERCONN. UPRIGHT (J.G.)
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. 88-11677-01
	PROJECTION: [Symbol]	SCALE:	REV. B
CODE IDENT.			SHEET 1 OF 1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	DRG REL	ERN 15 11-78	<i>[Signature]</i>



NOTES: UNLESS OTHERWISE SPECIFIED

INTERNAL	DATE 11/78	DATE 11/78	CINEMATRONICS INC © 1978 CA 95000
	PROJECT ENG 25-10594	DATE 11/78	
POWER	RELEASE APPROV 25-10594	DATE 11/78	DWG TITLE COIN DOOR ASSY W/LAMP COCKTAIL/UPRIGHT (4x3.6)
	DO NOT SCALE DWG TOLERANCE UNLESS OTHERWISE SPECIFIED	DATE 11/78	
PROJECTION SCALE 1" = 1"		MODEL NO 25-10594	REV A
FULL		CODE 10594	SHEET 1 OF 1

PROPRIETARY

THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIG. REL. ERN #013	3-25-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
J1 COIN DDDR INTERFACE MDLEX # 03-09-2092 1 41-10885-D1	J1-1	(VOL)	(BLK)	(22)	(F)		3
	J1-2	(COUNTER)		(22)	(M)		3
	J1-3	RT. SWITCH	GRY	22	M	20.0"	
	J1-3	LFT. SWITCH	YELLOW	22	M	24.75"	
	J1-4	(COUNTER)		(22)	(M)		3
	J1-5	(VOL)	(RED)	(22)	(F)		3
	J1-6	(VOL)	(BLUE)	(22)	(F)		3
	J1-7	RT. SWITCH	BLK	22	F	20.0"	SWITCH GND
	J1-8	LAMP 1	WHT	22	M	14.25"	LIGHT
	J1-8	LAMP 2	WHT	22	M	19.25"	LIGHT
	J1-9	LAMP 1	BRN	22	M	14.25"	LIGHT
	J1-9	LAMP 2	BRN	22	M	19.25"	LIGHT
LFT. SWITCH RT. SWITCH				BLK	22	30.75"	JUMPER

3 TO BE ADDED AT NEXT ASSEMBLY.

2 STRIP BACK 3/8" FOR SOLDER

1 CINEMATRONICS PART NO.

NOTES

TOL.
+1.0"
-0.0"

MATERIAL:	DRAWN BY: TENNES	DATE 3/14/82	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 3/15/82	
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV:	DATE	DWG TITLE WIRE LIST COIN DDDR HARNESS UPRIGHT / COCKTAIL JG
	DO NOT SCALE DWG		
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG SIZE DWG NO. 88-11680-01 B
	PROJECTION:	SCALE:	
	CODE IDENT.		SHEET 1 OF 1

4

3


2

1


PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG. REL. #016	4-14-82	<i>[Signature]</i>
B	LENGTH CHG'D ELO#173	4-16-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS	CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
P1 COIN DOOR MOLEX P/N 03-09-1093 ⚠ 41-10649-01	P1-1	P2-7	BLACK	22	M	34.25		P2 MAIN WIRE HARZ MOLEX P/N 03-09-2092 ⚠ 41-10885-01	P2-1	P1-7	BLACK		F		
	P1-2	P2-4	WHITE	22	F	34.25			P2-1	P1-9	BROWN		-		
	P1-2	CRI- CATHODE							P2-2	P1-3	YELLOW		M		
	P1-3	P1-4	YELLOW	22	F	3.0			P2-3	P1-4	GREY		M		
	P1-3	P2-2	YELLOW		-	34.25			P2-4	P1-2	WHITE		F		
	P1-4	P2-3	GREY		F	34.25			P2-4	CRI- ANODE					
	P1-4	P1-3	YELLOW	22	-				P2-5	P1-5	RED		M		
	P1-4	CRI- ANODE							P2-6	P1-6	BLUE		F		
	P1-5	P2-5	RED	22	M	34.25			P2-7	P1-1	BLACK		M		
	P1-6	P2-6	BLUE		M				P2-8	CRI- CATHODE					
	P1-7	P2-1	BLACK		M				P2-8	P1-8	RED		M		
	P1-8	P2-8	RED		F				P2-9						NOT USED
	P1-9	P2-1	BROWN	22	F	34.25									

- ⚠ THIS WIRES ARE TWISTED.
2. CATHODE SIDE  ANODE SIDE OF DIODE.
- ⚠ CINEMATRONICS INC. PART NO.
- NOTES: UNLESS OTHERWISE SPECIFIED

TOL:
+1.0
-0.0

MATERIAL:	DRAWN BY: P. ZWIERZ	DATE 4-15-82	CINEMATRONICS INC. El Cajon Ca. 92020			
FINISH:	PROJECT ENGR: <i>[Signature]</i>	DATE 8/10/82				
	RELEASE APPROV: <i>[Signature]</i>	DATE 4/15/82				
DO NOT SCALE DWG			DWG TITLE WIRE LIST - COIN DOOR INTERCONNECT UPRIGHT/COCKTAIL (J.G. & N.B.)			
TOLERANCE: UNLESS OTHERWISE SPECIFIED			MODEL NO.	DWG NO. SIZE C	DWG NO. 88-11755-01	REV. B
PROJECTION:  SCALE: FULL			CODE IDENT. SHEET 1 OF 1			

4

3

2

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN #13	3-26-81	<i>[Signature]</i>
B	ECO 164 ADD 2A To PB	3-24-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
<u>P6</u>	P6-1	P7-3	BLK	22	M	15.75	
CPU BD	P6-1	P8-3	BLK	22	M		
MOLEX #	P6-2	P8-6	RED	22	M		
03-09-2062	P6-3	P8-5	GRN	22	M		
△ 91-10954-01	P6-4	P8-4	BLU	22	M		
	P6-5	P7-1	WHT	22	M		
	P6-5	P7-2	WHT	22	M	15.75	
	P6-6						NOT USED
<u>P7</u>							
RASTER MON	P7-1	P6-5	WHT	22	F		
MOLEX #	P7-2	P6-5	WHT	22	F		
09-50-7031	P7-3	P6-1	BLK	22	F		
△ 41-11727-01							
<u>P8</u>	P8-1						NOT USED
	P8-2						NOT USED
RASTER MON	P8-3	P6-1	BLK	22	F		
MOLEX #	P8-4	P6-4	BLUE	22	F		
09-50-7061	P8-5	P6-3	GRN	22	F		
△ 41-11724-01	P8-6	P6-2	RED	22	F		

3. M = MALE PIN, MOLEX P/N 02-09-2118.

△ F = CRIMP TERMINALS MOLEX P/N 08-50-0106
△ P/N 35-10880-01.

△ CINEMATRONICS PART NO.

NOTES: UNLESS OTHERWISE SPECIFIED

TOLERANCE

+ 1.0
- 0.0

MATERIAL:	DRAWN BY: TENNIS	DATE: 3-9-81	CINEMATRONICS INC. El Cajon Ca 92020		
FINISH:	PROJECT ENGR: <i>[Signature]</i>	DATE: 1/15/82			
	RELEASE, APPROV: <i>[Signature]</i>	DATE: 4/1/82			
	DO NOT SCALE DWG				
TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO.	DWG SIZE C	DWG NO. 88-11711-01	REV. B
PROJECTION:		SCALE:	CODE IDENT.		SHEET OF

DWG TITLE WIRE LIST-
RASTER MONITOR TO GAME BD
UPRIGHT/COCKTAIL
(J.G.)

4

3

2

1

4

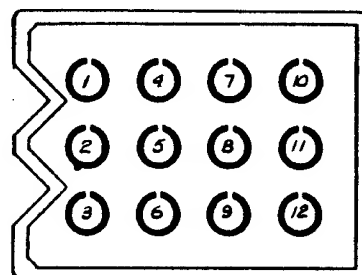
3

2

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

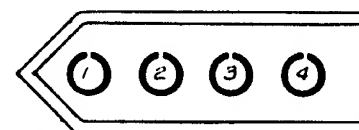
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



J1

J1 CONNECTOR DATA		
PIN NO.	WIRE COLOR	FUNCTION
J1-1	GRN	CHASSIS GND
J1-2	WHT	TXFMR LUG #3
J1-3	RED/BLK	TXFMR LUG #1
J1-4	BROWN (2)	6.3VAC GND
J1-5	WHITE (2)	6.3VAC
J1-6	YEL	SPOT KILL (250uF)
J1-7	RED/GRAY	+25V
J1-8	BLU (2)	-25V
J1-9	ORG (2)	+5V
J1-10	ORG	+5V
J1-11	BLK (2)	+5V RETURN
J1-12	BLK/WHT	± 25V RETURN

- ⚠ 3AMP INLINE FUSE.
- ⚠ .5AMP INLINE FUSE.
- ⚠ 3AMP INLINE CIRCUIT BREAKER CB1.
- ⚠ 3AMP INLINE CIRCUIT BREAKER CB2.



J2

J2 CONNECTOR DATA		
PIN NO.	WIRE COLOR	FUNCTION
J2-1	BLACK	TXFMR LUG #1
J2-2	WHITE	TXFMR LUG #3
J2-3	BLACK	TXFMR LUG #2
J2-4	WHITE	TXFMR LUG #4

POWER SUPPLY CONECTORS
BOTH J1 & J2 AS VIEWED FROM THE
FRONT OF POWER SUPPLY.

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY: 2/1/23/14	DATE: 2/2/79	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR: C. Williams	DATE: 9-79	
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV: CFW	DATE: 9-79	DWG TITLE POWER SUPPLY PINOUT ILLUSTRATION
	DO NOT SCALE DWG		
TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO.	DWG NO. 72-10877-03
PROJECTION: 1st Angle	SCALE:	DWG SIZE: C	REV: A
CODE IDENT.		SHEET / OF /	

4

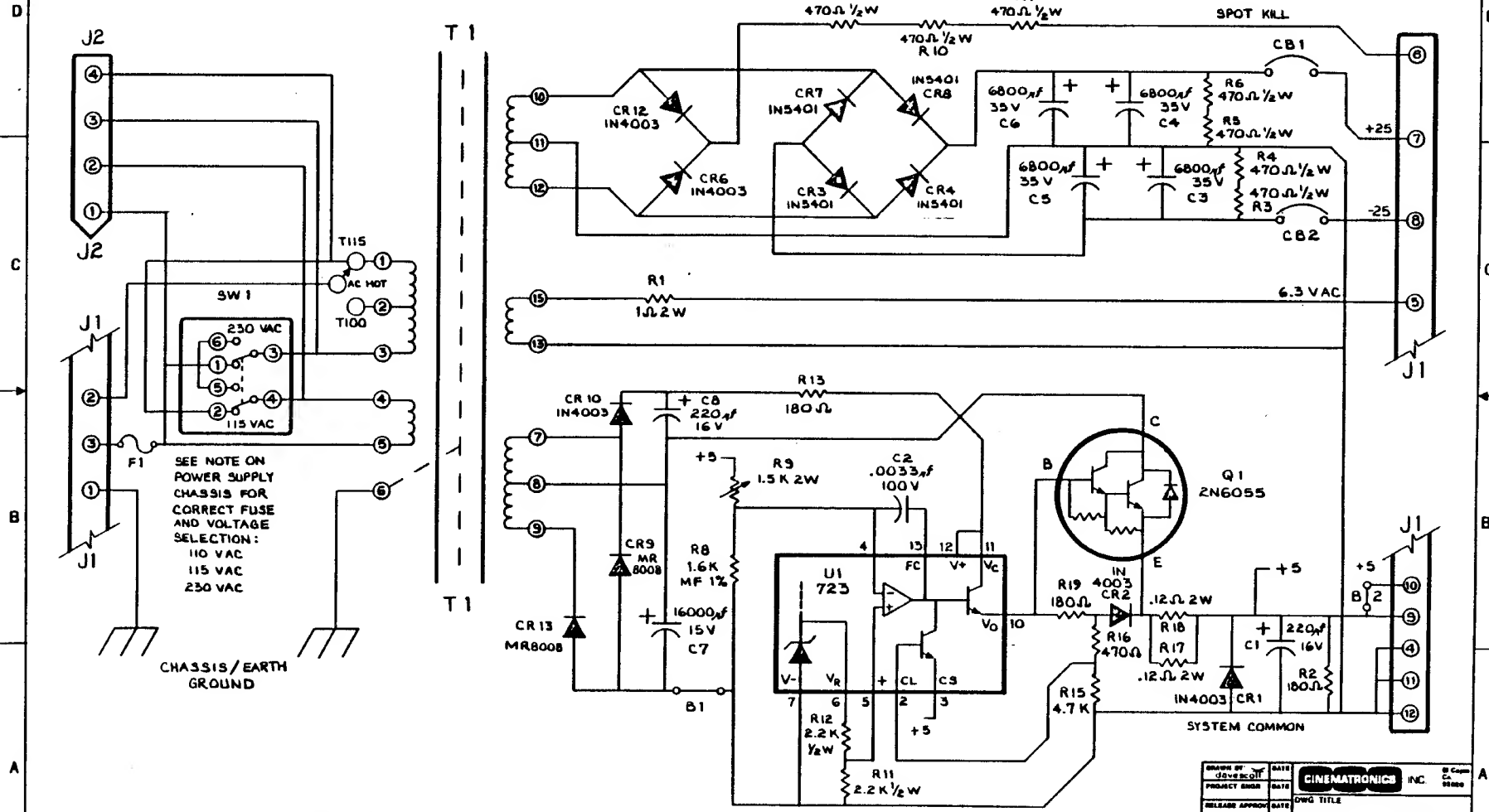
3

2

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



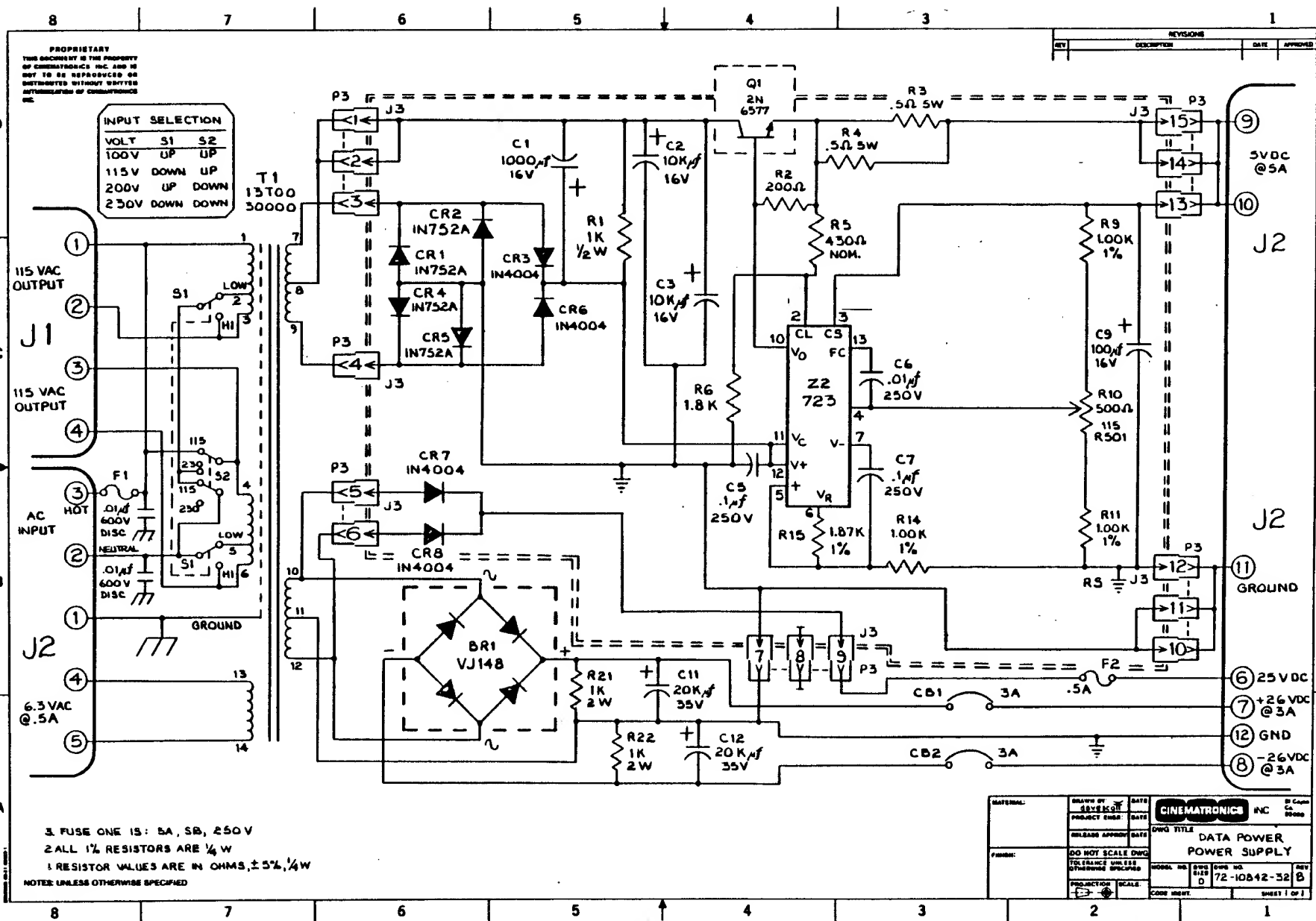
SEE NOTE ON
POWER SUPPLY
CHASSIS FOR
CORRECT FUSE
AND VOLTAGE
SELECTION:
110 VAC
115 VAC
230 VAC

CHASSIS/EARTH
GROUND

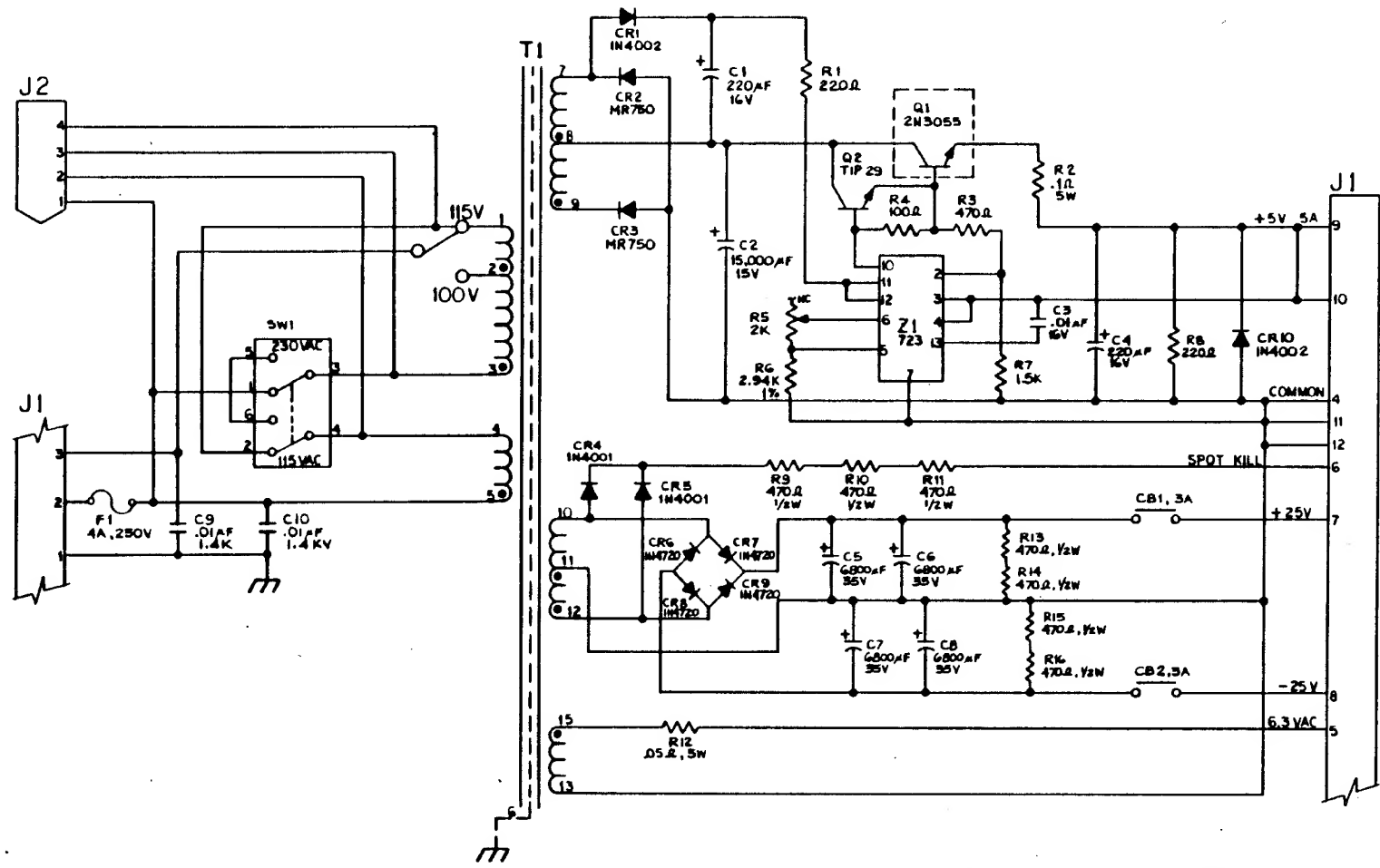
1. SCHEMATIC SET FOR 115 VAC OPERATION

NOTES: UNLESS OTHERWISE SPECIFIED

DESIGNED BY J. G. BROWN	DATE 10/1/72	CINEMATRONICS INC. © Copyright 1972
PROJECT ENGINEER J. G. BROWN	DATE 10/1/72	
RELEASE APPROVED J. G. BROWN	DATE 10/1/72	OWG TITLE CONDOR POWER SUP
DO NOT SCALE DIMS TOLERANCE UNLESS OTHERWISE SPECIFIED		MODEL NO 72-10842-22
PROJECTION 1-2	SCALE 1/8"	REV A
CODE SHEET		SHEET 1 OF 1



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	01	PROTOTYPE	4 DEC 80	RAT
	A	PRODUCTION RELEASE	13 JAN 81	2
	B	ADD C9,10 - SEE ECO 0028 "A"	29 JAN 81	RAT



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES ± .XX ± .XXX ± °			
CONTRACT NO		APPROVALS DATE	
DRAWN C. ESCALERAS		4 DEC 80	
CHECKED R. Prohm		12/1/80	
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION WHICH SHALL BE KEPT IN CONFIDENTIALITY TO THE EXTENT PERMITTED BY LAW		SCALE NONE	
62A0013-00 0028		CODE IDENT NO 12A0028-00	
NEXT ASSY USED ON		REV B	
APPLICATION		DO NOT SCALE DRAWING	
SHEET 1 OF 1		SHEET 1 OF 1	

8

7

6

5

4

3

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION BY CINEMATRONICS
INC.

REGULATOR P.C. BOARD
35-11605-01

MOUNTING PLATE - PWR APPL + TRANS
25-11606-01

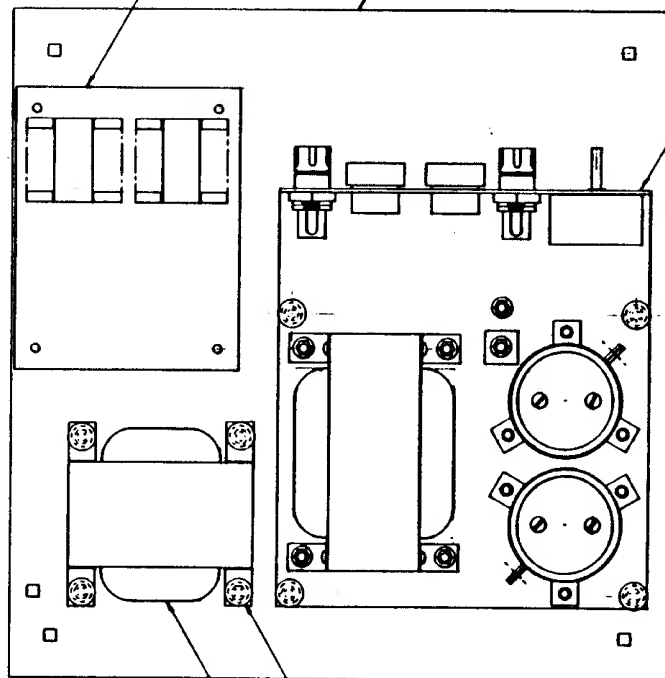
POWER SUPPLY
25-10542-50

PLAT, CARRIAGE, 3/4" x 1/2", 25-10561-01 (4)

WASHER, FLAT, NO. 10 x 1/2", 25-10568-01 (4)

WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)

NUT, HEX, NO. 10-24, 25-10558-01 (4)



SEE DETAIL "B"

TRANSFORMER

25-11717-01

BOLT, CARRIAGE, 3/4" x 1/2"

25-10561-01 (4)

WASHER, FLAT, NO. 10 x 1/2", 25-10568-01 (4)

WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)

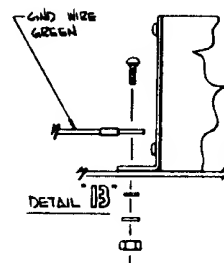
NUT, HEX, NO. 10-24, 25-10558-01 (4)

SEE DETAIL "B"

VIEW A-A



DUAL LOCKING R.C.B.
SPACER (4)
PIN 25-11607-01



DETAIL "B"

NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	DEL. REL.	11-15	A-T-BL

MATERIAL:	DRAWN BY P. WHITE	DATE 7/78	CINEMATRONICS INC. 31 Cooper St. 02020
	PROJECT ENGINEER J. P. E.	DATE 7/78	
FINISH:	RELEASE APPROVED DATE 7/78	DWG TITLE POWER SUPPLY REGN (N.B.) (J.G.)	REV A
	DO NOT SCALE DWG		
TOLERANCE UNLESS OTHERWISE SPECIFIED	MODEL NO	REV NO	SHEET 1 OF 2
	0	35-11700-01	
PRODUCTION F-3	SCALE DAL	CORE IDENT	

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	REV ECL	22M 75	4-1-82

BOLT, CARRIAGE, 3/16" X 1/2", 25-10551-01 (4)
WASHER, FLAT, NO. 10 X 1/2", 25-10568-01 (4)
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)
NUT, HEX, NO. 10-24, 25-10558-01 (4)

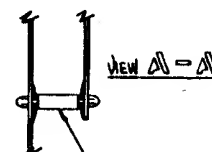
ROUTING PLATE - PWR SWY & TERM.
20-11606-01

SEE DETAIL "B"

TRANSFORMER, 87-11717-01

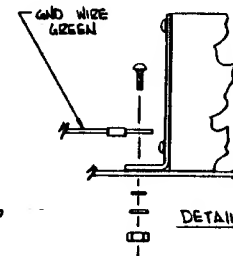
BOLT, CARRIAGE, 3/16" X 1/2", 25-10551-01 (4)
WASHER, FLAT, NO. 10 X 1/2", 25-10568-01 (4)
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)
NUT, HEX, NO. 10-24, 25-10558-01 (4)

REGULATOR P.C. Assy
20-11606-01



VIEW A-A

DUAL LOCKING P.C.B.
SPACER
25-11607-01 (4)



DETAIL "B"

POWER SUPPLY - CONDO (-02)
82-10842-20
POWER SUPPLY - NATL POWER (-03)
82-10842-40

= (1) 2 NOTED
= (1) 3 NOTED

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DESIGNED BY E. RAINIER	DATE 15M	CINEMATRONICS INC 8000
	PROJECT ENGINEER	DATE	
FINISH:	RELEASE APPROVED	DATE	DWG TITLE POWER SUPPLY Assy
	DO NOT SCALE DWG		
TOLERANCE UNLESS OTHERWISE SPECIFIED	MODEL NO	DWG NO	REV A
	0	38-11700	
PROJECTION SCALE FULL	SHEET 2 OF 2		

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN#018	4-16-82	<i>[Signature]</i>

AS VIEWED FROM
WIRE SIDE.



FEMALE QUICK
DISCONNECTS
(REF)

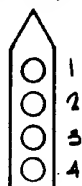
WHITE

BLACK

P12

ASSY TRANSFORMER
MONITOR HARNESS
87-11688-01
BLACK & WHITE TWISTED PAIR, 18 GA

AS VIEWED FROM
WIRE SIDE.



WHITE

BLACK

P10

ASSY TRANSFORMER
BND. HARNESS
87-11767-01
GREEN, 18 GA

ASSY TRANSFORMER
PWR SUPPLY HARNESS
87-11768-01
BLACK & WHITE TWISTED, 18 GA

TERMINAL, RING TONGUE
(REF)

⚠ ADD 3/32 HEAT SHRINK TUBING TO ALL TERMINALS.

NOTES: UNLESS OTHERWISE SPECIFIED

TOLERANCE
+1.0
-0.0

MATERIAL:	DRAWN BY: F. RUIZ	DATE 4-16-82	CINEMATRONICS INC. El Cajon Ca 92020
	PROJECT ENGR: W. F. G.	DATE 4-16-82	
FINISH:	RELEASE APPROV:	DATE 4-16-82	DWG TITLE ASSY, TRANSFORMER & COLOR MASTER (J.G.)
	DO NOT SCALE DWG		MODEL NO C
TOLERANCE: UNLESS OTHERWISE SPECIFIED		SCALE: NONE	DWG NO. 38-11723-01
PROJECTION: NONE		REV. A	SHEET 1 OF 1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN #018	4-16-82	<i>[Signature]</i>

TERMINAL, FEMALE, QUICK DISCONNECT, .032 X .250 FULLY INSULATED
SPEC. TYTON NO. PV22JF1QD OR NY22JF1QD
CINE. NO. 35-11772-01 (2)

PI2

PI2
2 CIR MALLG.
MOLEX NO. 19-09-1029
CINE. NO. 41-11766-01

PIN	COLOR	AWG	PIN	LENGTH	FUNCTION
1	BLACK	18	F	26.0	
2	WHITE	18	F	26.0	

1. F= FEMALE SOCKET, MOLEX NO. 02-09-1118.
NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY: F. RAINEZ	DATE: 4/16/82	CINEMATRONICS INC El Cajon Ca 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 4/16/82	
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE: 4/16/82	DWG TITLE: HARNESS ASSY- TRANSF. * MONITOR
	DO NOT SCALE DWG		MODEL NO: DWG NO: 87-11688-01
TOLERANCE UNLESS OTHERWISE SPECIFIED		PROJECTION: SCALE: FULL	REV: A
CODE IDENT.		SHEET 1 OF 1	

TA
+1.0
-0.0

4

3

2

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	0216 REL	ERN 018	4-16-82 <i>[Signature]</i>

TERMINAL, FEMALE, QUICK DISCONNECT, .032 X .250 FULLY INSULATED
SPEC. TYTON NO. PV22JF1QD OR NY22JF1QD
CING. No. 85-11772-01 (2)

P1(1)

P10

4 CIR. MALE
MOLEX No. 03-09-1042
CING. No. 41-10658-01

PIN	COLOR	AWG	PIN	LENGTH	FUNCTION
1	BLACK	18	M	15.0	
2	WHITE	18	M	15.0	
3					NOT USED
4					NOT USED

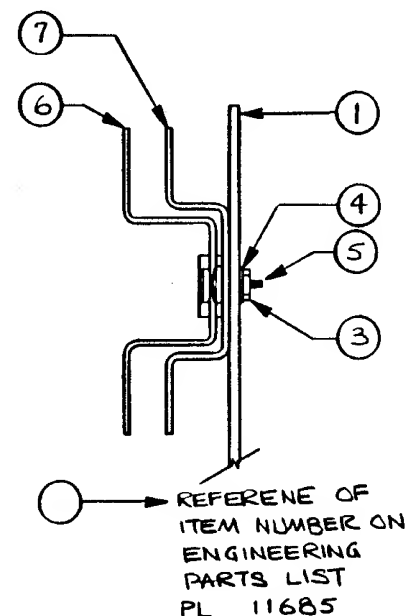
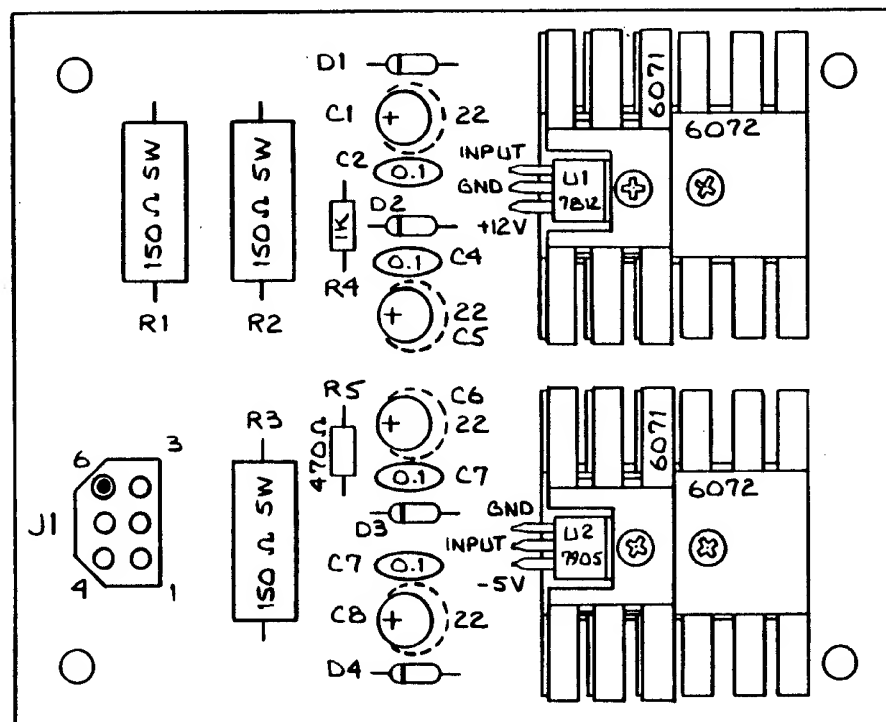
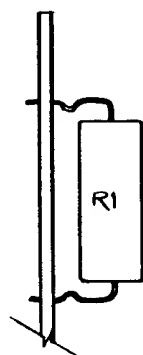
1. M = MALE PIN, MOLEX No. 02-09-2118.
NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY: F. R. M. 12/82	DATE 4/1/82	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR: 12/82	DATE 4/1/82	
FINISH:	RELEASE APPROV: <i>[Signature]</i>	DATE 4/1/82	DWG TITLE HARNESSES DATA- TRANSF. * POWER SUPPLY
	DO NOT SCALE DWG		
TOL. +1.0 -0.0	TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO
	PROJECTION: FULL	SCALE: FULL	DWG NO SIZE C
	CODE IDENT.		REV A
	SHEET 1 OF 1		

5/11/82 10:11 AM

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIGINAL RELEASE ERN 012	19 MAR 1982	<i>[Signature]</i>



5. R4 AND R5 ARE 1/4WATT, 5% CARBON, VALUES ARE IN OHMS

4. ELECTROLYTIC CAPACITOR
WITH POLARITY MARK
AND LOCATION FOR OVERSIZED CAPACITOR

3. IS A DISK CAPACITOR

2. CAPACITOR VALUES ARE IN MICRO FARADS, 50 V

1. ALL DIODES ARE 1N4003

NOTES: UNLESS OTHERWISE SPECIFIED

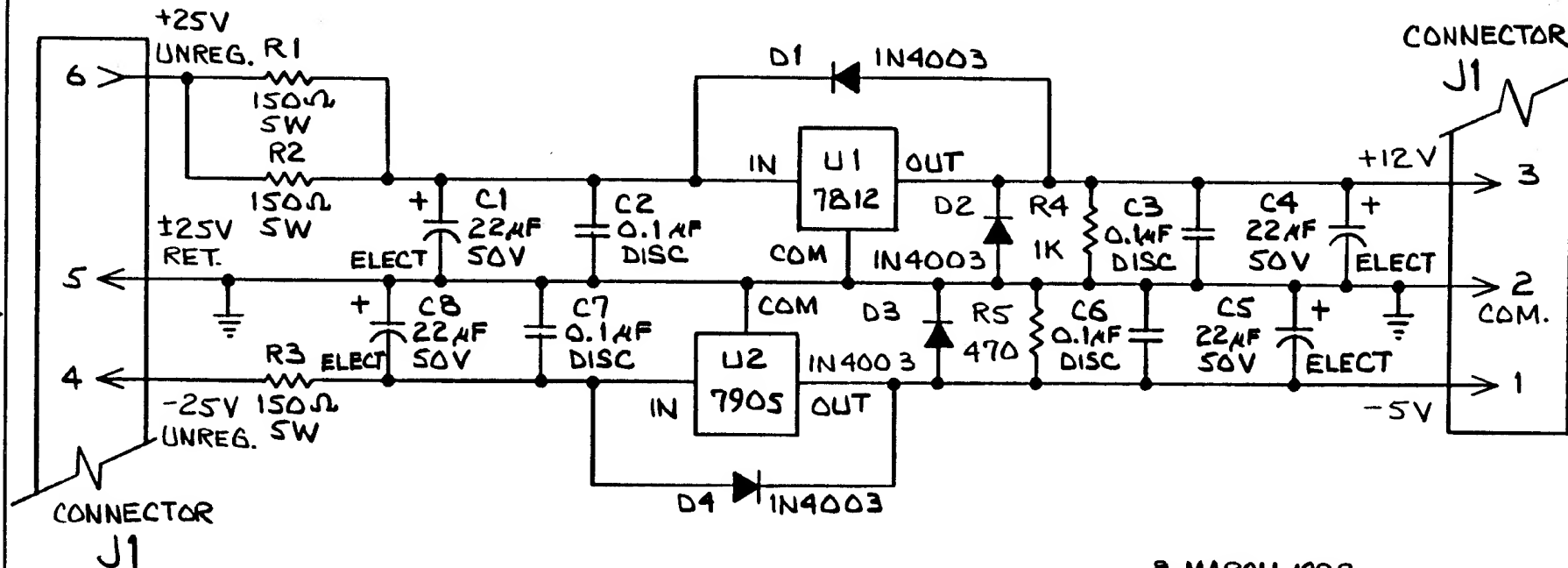
MATERIAL:		DRAWN BY: <i>DAVE SCOTT</i>		DATE: 16 MARCH 1981	
FINISH:		PROJECT ENGR: <i>[Signature]</i>		DATE: 3/15/81	
		RELEASE APPROV: <i>[Signature]</i>		DATE: 3/17/81	
		DO NOT SCALE DWG			
		TOLERANCE: UNLESS OTHERWISE SPECIFIED			
		PROJECTION:		SCALE: 2:1	
		MODEL NO.		DWG NO.	REV.
		81-11685-01		B	
		CODE IDENT.		SHEET 1 OF 1	

50-211-0013

PROPRIETARY

THIS DOCUMENT IS THE PROPERTY OF CINEMATRONICS INC. AND IS NOT TO BE REPRODUCED OR DISTRIBUTED WITHOUT WRITTEN AUTHORIZATION OF CINEMATRONICS INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ORIGINAL RELEASE ERN 012	19 MAR 1982	<i>[Signature]</i>



2. R4 AND R5 VALUES ARE IN OHMS
1. R4 AND R5 ARE 1/4 WATT, 5% CARBON
NOTES: UNLESS SPECIFIED OTHERWISE

8 MARCH 1982

MATERIAL:	DRAWN BY: <i>dwadscott</i>	DATE: <i>3/1/82</i>	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: <i>3/1/82</i>	
FINISH: BREAK ALL SHARP EDGES AND DEBURR ALL HOLES.	RELEASE APPROV: <i>[Signature]</i>	DATE: <i>3/1/82</i>	DWG TITLE REGULATOR +12, -5 VOLTS
	DO NOT SCALE DWG		
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		
PROJECTION: <i>[Symbol]</i>	SCALE:	MODEL NO.	DWG NO. 72-11685-00
		SIZE B	REV. B
CODE IDENT.		SHEET 1 OF 1	

4

3

2

1

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL	ERN 15	4-7-62

ASS'Y BOARD (N.B.)
38-11733-01

INSTALL THIS WIRE
FROM FAR SIDE

SOLDER TO PIN B (COMP. SIDE) & PIN J (CIR. SIDE).
BOTH SIDES AS SHOWN.

USE BUSSWIRE
P/N 34-10596-01
2 PLACES

COMPONENT
SIDE

⚠ REMOVE POT FROM VRI LOCATION AND INSTALL
CAPACITOR, .005 MF, 50V, DISC AS SHOWN
P/N 63-11584-01

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL:	DRAWN BY:	DATE	CINEMATRONICS INC. El Cajon Ca. 92020	
	TENNES	4-6-62		
	PROJECT ENGR:	DATE		
	RELEASE APPROV:	DATE		
FINISH:	DO NOT SCALE DWG	DATE	DWG TITLE ASS'Y BOARD W/VOLUME MOD (N.B.)	
	TOLERANCE: UNLESS OTHERWISE SPECIFIED	DATE		
	PROJECTION:	SCALE:		
	MODEL NO.	DWG SIZE		DWG NO.
			38-11733-02	REV.
				A
CODE IDENT.			SHEET 1 OF 1	

DRAWING 4021 40413

PROPRIETARY

THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A	ORIG RELEASE ERN #013	3/25/82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
P4							
MAIN							
WIRE HARN	P4 - 1	SPEAKER	BRN	22	M	45.0	△
MOLEX P/N	P4 - 2	SPEAKER	WHT	22	M	45.0	△
03-09-203B	P4 - 3						NOT USED
△ 41-10659-01							

△ 2 CINEMATRONICS PART NO.

△ 1 WIRES TERMINATE AT SPEAKER END WITH
WITH FEMALE QUICK DISCONNECTS,
CINEMATRONICS P/N 35-10617-01

NOTES:

TOL.
+1.0"
-0.0"

MATERIAL:	DRAWN BY: TEJNES	DATE 7/15/82	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE 7/15/82	
FINISH: BREAK ALL SHARP EDGES AND DEBURN ALL HOLES.	RELEASE APPROV:	DATE	DWG TITLE WIRE LIST-(COCKTAIL) SPEAKER HARNESS (JG)
	DO NOT SCALE DWG		
	TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO.
	PROJECTION: <i>[Symbol]</i>	SCALE:	DWG NO. 80-11692-01
CODE IDENT.			REV. A
SHEET 1 OF 1			

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

CONT. PANEL
ASSY
PLTR 2 COCKTAIL
38-11691-02

CONT. PANEL
ASSY
PLTR 1 COCKTAIL
38-11692-01

COIN DOOR
ASSY
38-11698-01

SPEAKER
38-11439-01

REGULATOR
BOARD
ASSY
81-11685-01

ASSY. BOARD
WITH VOL. MOD. (N.B.)
38-11733-02

RASTER COLOR
MON. ASSY
38-11434-01

POWER
SUPPLY ASSY
38-11716-01
38-11716-02

TRANSFORMER
ASSY
38-11723-01

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG RE ERW # 014	4-5-82	<i>[Signature]</i>

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE 5/5/82	CINEMATRONICS INC. El Cajon Ca. 92020
	PROJECT ENGR:	DATE	
	RELEASE APPROV:	DATE	
	DO NOT SCALE DWG		
FINISH:	TOLERANCE: UNLESS OTHERWISE SPECIFIED	MODEL NO.	DWG NO.
	PROJECTION:	SCALE: NONE	SIZE C
			11-11735-01
			REV. A
CODE IDENT.		SHEET 1 OF 1	

NOTES: UNLESS OTHERWISE SPECIFIED

D

C

B

A

D

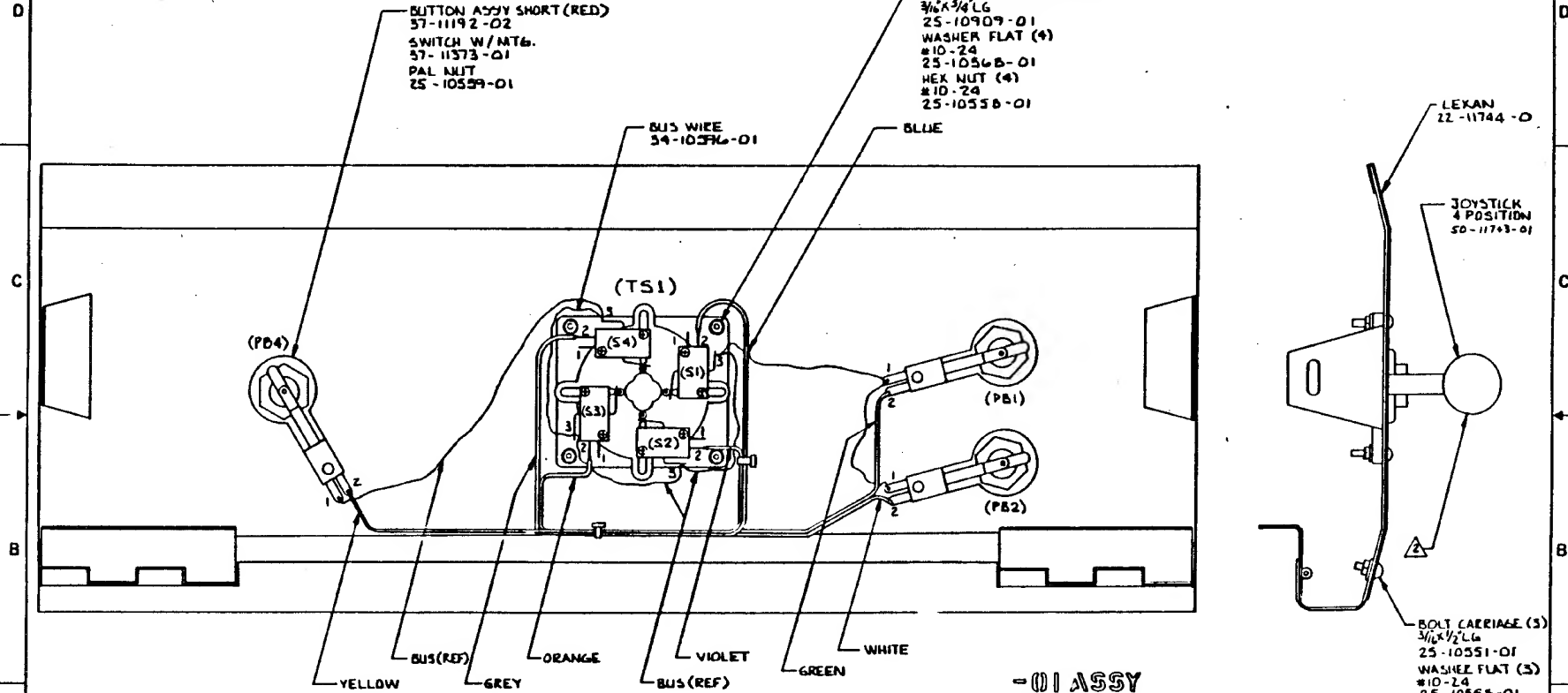
C

B

A

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ORIG. REL.	LEN 15	4-1-81



-01 ASSY
PLAYER 1

WIRE LIST			
FROM	TO	WIRE	LENGTH
PB2-1	PB1-1	BUS	3.0
PB1-1	TSI/S1-3		5.0
TSI/S1-3	TSI/S2-3		4.0
TSI/S2-3	TSI/S3-3		4.0
TSI/S3-3	TSI/S4-3		4.0
TSI/S4-3	PB4-1	BUS	9.0

3 REF. DES. SHOWN FOR REFERENCE
ONLY AND DO NOT APPEAR ON PART.

2 BALL END OF JOYSTICK MUST BE REMOVED
BEFORE PLACEMENT. APPLY LOCKTITE ON
THE END AND REPLACE BALL.

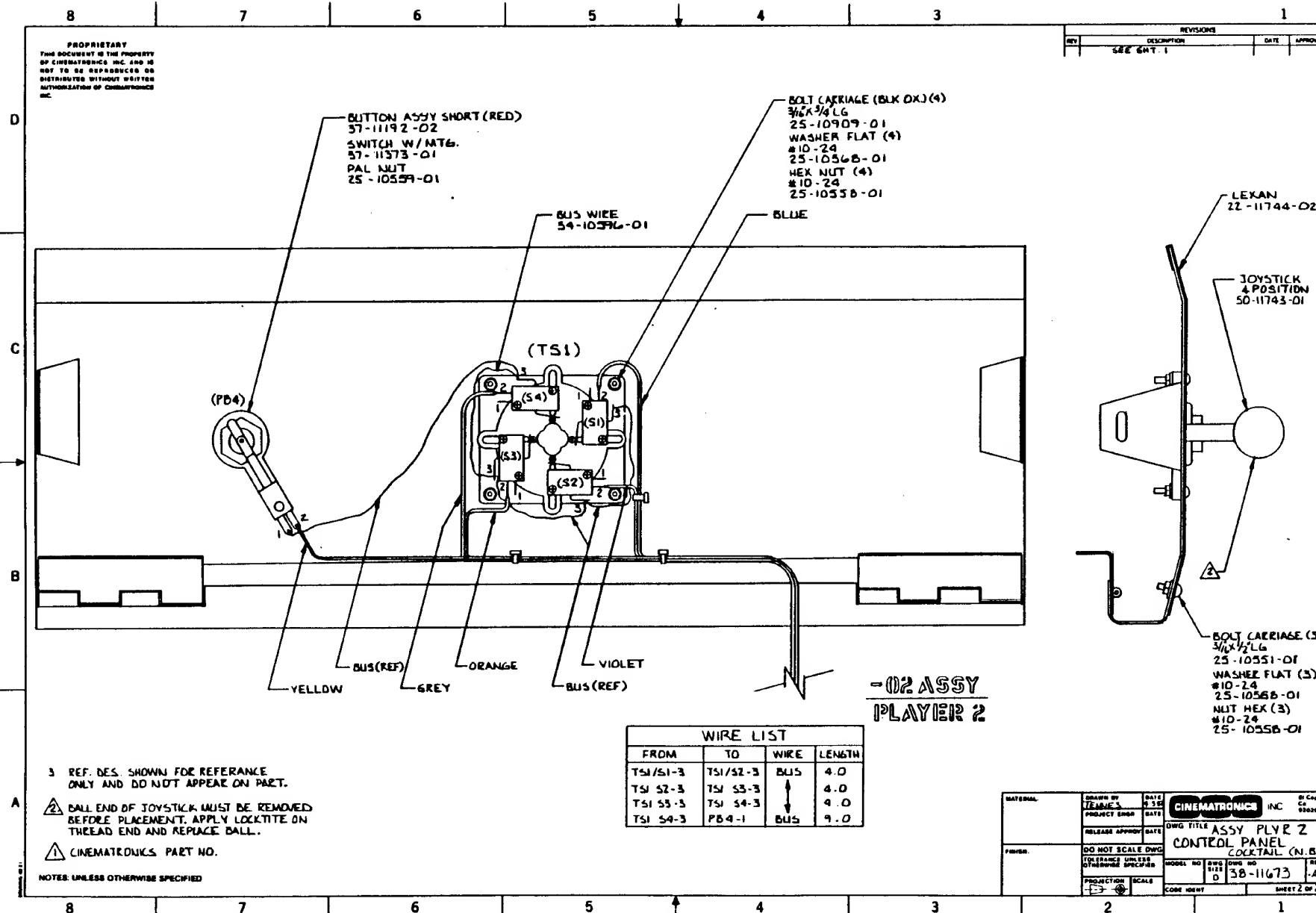
1 CINEMATRONICS PART NO.

NOTES: UNLESS OTHERWISE SPECIFIED

DATE	DESIGNED BY	DATE	CINEMATRONICS INC	S. Comp Co. 07600
	PROJECT ENG	DATE		
FORM	APPROVED BY	DATE	DWG TITLE	REV
	DO NOT SCALE DWG	DATE		
TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE	MODEL NO	DWG NO
PRODUCTION		SCALE	38-11675	0
CODE IDENT		SHEET OF 2		

PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	SEE GNT. 1		



4

3

2

1

PROPRIETARY

THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC. AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A	ORIG REL ERN # 012	3-25-82	<i>[Signature]</i>

CONNECTOR	FROM	TO	COLOR	AWG	PIN	LENGTH	REMARKS
P3 EDGE CONN. MOLEX P/N 03-09-1152 OR EQUIV. OUR P/N 41-10660-01 15 CIR. MALE	P3-1	P14-9	ORANGE	22	M	28.0	
	P3-2	P14-8	BLUE		F		
	P3-3	P14-7	BROWN				
	P3-4	P14-6	GRAY				
	P3-5	P14-5	YELLOW				
	P3-6	P14-4	VIOLET				
	P3-7	P14-1	BLACK			28.0	GND NO. 2
	P3-7	P13-1	BLACK			10.0	GND NO. 1
	P3-8	P13-2	WHITE				
	P3-9	P13-3	GREEN				
	P3-10	P13-4	VIOLET				
	P3-11	P13-5	YELLOW				
	P3-12	P13-6	GREY				
	P3-13	P13-7	BROWN				
	P3-14	P13-8	BLUE				
	P3-15	P13-9	ORANGE	22	F	10.0	
P13 PLAYER NO.1 MOLEX P/N 03-09-1093 OR EQUIV. OUR P/N 41-10649-01 9 CIR. MALE	P13-1	P3-7	BLACK	22			GND NO. 1
	P13-2	P3-8	WHITE				
	P13-3	P3-9	GREEN				
	P13-4	P3-10	VIOLET				
	P13-5	P3-11	YELLOW				
	P13-6	P3-12	GREY				
	P13-7	P3-13	BROWN				
	P13-8	P3-14	BLUE				
	P13-9	P3-15	ORANGE	22			
P14 PLAYER NO.2 MOLEX P/N 03-09-1093 OR EQUIV. OUR P/N 41-10649-01 9 CIR. MALE	P14-1	P3-7	BLACK	22			GND NO. 2 NOT USED
	P14-2						NOT USED
	P14-3						
	P14-4	P3-6	VIOLET				
	P14-5	P3-5	YELLOW				
	P14-6	P3-4	GREY				
	P14-7	P3-3	BROWN				
	P14-8	P3-2	BLUE				
	P14-9	P3-1	ORANGE	22			

NOTES: UNLESS OTHERWISE SPECIFIED

TOLERANCE
+1.0
-0.0

MATERIAL:	DRAWN BY: F. RAMIREZ	DATE: 3-9-82	CINEMATRONICS INC El Cajon Ca. 92020
	PROJECT ENGR: <i>[Signature]</i>	DATE: 3-15-82	
FINISH:	RELEASE APPROV:	DATE:	DWG TITLE WIRE LIST - CONTROL PNL INTERCONN. COCKTAIL (J.G.)
	DO NOT SCALE DWG TOLERANCE: UNLESS OTHERWISE SPECIFIED		MODEL NO. DWG NO. C 88-11710-01
PROJECTION: SCALE: 		REVISION: A	CODE IDENT. SHEET OF 1

4

3

2

1

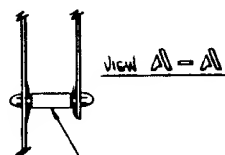
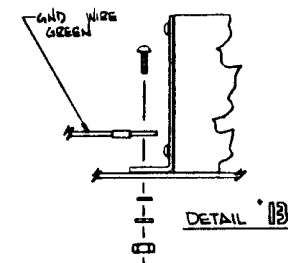
PROPRIETARY
THIS DOCUMENT IS THE PROPERTY
OF CINEMATRONICS INC AND IS
NOT TO BE REPRODUCED OR
DISTRIBUTED WITHOUT WRITTEN
AUTHORIZATION OF CINEMATRONICS
INC.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	DRG REL	LEN 14	4-7-61

MOUNTING PLATE - PWR SUPPLY & TRANS
20-11709-01

REGULATOR P.C. MNT
58-11656-01

SEE DETAIL '13'



DUAL LOCKING P.C.B.
SPACER (4)
P/N 25-11607-01

POWER SUPPLY 82-10842-20 CALDOR (-01)
POWER SUPPLY 82-10842-40 NATL POWER (-02)
BOLT, CARRIAGE, 3/16" X 1 1/4", 25-10564-01 (4)
WASHER, FLAT, NO. 10 X 1/2", 25-10568-01 (4)
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)
NUT, HEX, NO. 10-24, 25-10566-01 (4)

TRANSFORMER, 87-11717-02
BOLT, CARRIAGE, 3/16" X 1/2", 25-10561-01 (4)
WASHER, FLAT, NO. 10 X 1/2", 25-10568-01 (4)
WASHER, LOCK, NO. 10 INTERNAL, 25-10572-01 (4)
NUT, HEX, NO. 10-24, 25-10566-01 (4)

= 11 NOTED
= 12 NOTED

NOTES: UNLESS OTHERWISE SPECIFIED

MATERIAL	DESIGNED BY 1-3-1961	DATE 7-2-61	CINEMATRONICS INC IN Comp Co 8000	
	PROJECT ENG 11/2/61	DATE 7/2/61		
FINISH	WILLIAM SPERRY DATE 1-3-1961	DWG TITLE POWER SUPPLY & TRANS COCKTAIL (N.B.) (J.G.)		
	DO NOT SCALE DWG	TOLERANCE UNLESS OTHERWISE SPECIFIED		
PROJECTION	SCALE FULL	MODEL NO 25-11716-01	REV A	
CODE IDENT		SHEET 1 OF 1		